

**THE EFFECT OF BOARD RELATION ORIENTED
DIVERSITY AND TASK ORIENTED DIVERSITY ON
EARNING MANAGEMENT**

UNDERGRADUATE THESIS

**SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE BACHELOR DEGREE OF ACCOUNTING**

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STUDY PROGRAM OF ACCOUNTING



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AIRLANGGA UNIVERSITY

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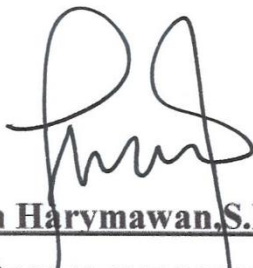


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STATEMENT OF DECLARATION

I (Arintis Wahyu Susanti; Student ID : 041511333124) declare that :

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Surabaya, 4 Oktober 2019

Declared by,



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FOREWORDS

All praise to Allah SWT, for the blessing that the researcher could finish the undergraduate thesis entitled “The Effect of Board Relation Oriented Diversity and Board Task Oriented Diversity on Earning Mangement”. This thesis aims to fulfill the partial requirement to achieve Accounting Bachelor Degree Program in Faculty of Economics and Business, Airlangga University.

Upon the completion of this research, researchers has received encouragement, prayers, and moral support from many parties. Therefore, as writer, I wolud express my gratitude towards :

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Surabaya, September 30th 2019

Arintis Wahyu Susanti

ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh *relation oriented diversity* dan *task oriented diversity* pada dewan komisaris terhadap manajemen laba. Penelitian ini menggunakan manajemen laba sebagai topik penelitian karena pada praktiknya manajemen laba sering dilakukan pada perusahaan dengan tujuan tertentu, padahal manajemen laba dapat memberikan dampak merugikan terhadap kualitas laba yang menjadi dasar pengambilan keputusan oleh sebagian pemangku kepentingan. Dalam beberapa penelitian sebelumnya, tata kelola perusahaan telah terbukti berpengaruh terhadap manajemen laba. Tata kelola perusahaan dilakukan oleh dewan komisaris, dewan direksi dan beberapa komite yang telah dibentuk dengan tujuan tertentu. Menggunakan teori keagenan, teori eselon atas dan teori ketergantungan sumber daya, penelitian ini menganalisis bagaimana *relation oriented diversity* dan *task oriented diversity* pada dewan komisaris berpengaruh terhadap manajemen laba. *Relation oriented diversity* pada dewan komisaris yang digunakan dalam penelitian ini diukur menggunakan tiga proksi yaitu usia dewan, jenis kelamin dewan, dan nasionalitas dewan. *Task oriented diversity* dalam penelitian ini diukur menggunakan dua proksi yaitu masa jabatan dewan dan keahlian dewan. Manajemen laba dalam penelitian ini diukur dengan pendekatan akrual menggunakan *Modified Jones Model*. Penelitian ini menggunakan 464 observasi perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia (BEI) pada periode 2013 hingga 2017. Teknik analisis yang digunakan dalam penelitian ini adalah regresi linear *Ordinaly Least Square (OLS)* dan regresi robus yang diproses dengan perangkat lunak STATA 14.0. Hasil penelitian ini menunjukkan pada *board relation oriented diversity* jenis kelamin dewan berpengaruh negatif signifikan terhadap manajemen laba, sedangkan usia dewan dan nasionalitas dewan tidak berpengaruh terhadap manajemen laba. Pada *task oriented diversity* masa jabatan dewan berpengaruh negatif signifikan terhadap manajemen laba sedangkan keahlian dewan berpengaruh positif signifikan terhadap manajemen laba.

Kata Kunci : *relation oriented diversity*, *task oriented diversity*, manajemen laba

ABSTRACT

This study aimed to examine the relationship of relation oriented diversity and task oriented diversity of board commissioner on earning management. This research use earning management as the topic because in practice, earning management is oftenly conducted by the company for specific purposes even though earning management has detrimental effect for earning quality which become a basis of decision making several stakeholders. The previous research, corporate governance has provided evidence of its effect on earning management. The corporate governance in the company is conducted by board of commissioner, board of directors and several established committees. Using agency theory, upper echelon theory, and resource dependence theory, this research analyze how relation oriented diversity and task oriented diversity in board of commissioner relate to earning management. Relation oriented diversity of board commissioner is measured using three proxies, they are board age, board gender and board nationality. Task oriented diversity in this research is measured using two proxies namely board tenure and board expertise. Earning management in this research is measured with discretionary approach using modified jones model. This research use sample of 464 year companies observation from manufacturing companies listed in Indonesia Stock Exchange (IDX) for the period 2013 up to 2017. Aalysis techniques use for this research is Ordinary Least Square (OLS) linear regression and robust regression that processed using STATA 14.0 software. The result shown in board relation oriented diversity, the board gender has negative significant effect on earning management while the board age and board nationality have no significant effect on earning management. In the board task oriented diversity, board tenure has negative significant effect on earning management while board expertise has positive significant effect on earning management.

Key words : relation oriented diversity, task oriented diversity, earning management

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CHAPTER 1

INTRODUCTION

1.1 Background

Financial statement is used as important tool for assessing economic condition includes financial position, performance of the company and changes of equity. The numbers contained in financial statement affects several stakeholders such as creditor, investor, and government. Sulistiawan et al. (2011) found creditor uses company financial statement information as a consideration on granting the credit, investors decide the appropriate fund to be invested to the company by looking at the company financial performance , and the government use earning to calculate the income tax amount. The important function of financial statement requires proper presentation of financial statement to ensure the stakeholder as financial statement user could take valid decisions (Setiawati and Na'im, 2000).

One attribute of financial statement that being attention for various stakeholder is earning (Agustia, 2013). Earning represents financial performance in each current period and shows managerial success in managing company resources. Stakeholder prefers certain level of earning. Managers try to meet stakeholder expectation because they can benefited if the company earning is in accordance with stakeholder interest. The benefit for managers can be the form of material bonuses or the security of their position (Verbruggen et al., 2008). Bonus given for the management may motivate management to manipulate the earnings. Using the flexibility of accounting standard, the manager has a discretion to choose

accounting methods in presenting earning. The discretion of accounting method in presenting earning which purposed to get self-serving gain often mentioned as earning management action.

Earning management although doesn't violate legal rules and accounting standard, it results extreme detrimental value for several stakeholders (Hooghiemstra et al., 2019). Earning management is referred as the factor which lowering earning quality so that academician and practitioners have negative views. Purwanti et al. (2015) had conducted a research about meaning of earning management by tax inspector, credit analyst, investor, public accountant and accounting lecturers. The research participants define earning management based on their professional opinion and the conclusion drawn is the participants define earning management as unethical practice and can mislead the stakeholder interpretation.

Due to its consequence, many researchers concern on earning management topics. Researchers such as Roychowdhury (2006), Kothari et al. (2005), Kaznik (1999), Dechow et al. (1995), and Jones (1991) had develop the model to detect earning management. Other research from Hooghiemstra et al. (2019), Gavius et al. (2012), Sun et al. (2010), and Davidson et al. (2007) were focused on examining other variables that may influence earning management. In Indonesia, research about earning management is topic that became continually examined each year. Suprianto (2017) found that the articles published in Indonesia top ranked journals from 1999 to 2016 discuss about earning management topics. The 24% of those articles examined the relation of corporate governance and earning management.

The corporate governance structure in the company consist of the board and the audit committee membership. Both of them has important role for the company. Enofe et al. (2017) stated the board has responsibility on controlling and monitoring function to ensure that management had provided credible financial statement for various stakeholders. Monitoring for the management will be effective if the board is independent. Independency of the board avoids intentional influence in making assessment of management performance. To make effective monitoring, board composition is one of the factors that should be considered. It is because if board is not well constituted, the company is vulnerable to management's authority deviation of the reported earnings (Siam et al., 2014).

There are two type of board system. First is one tier board system. In one tier system both executive function and supervisory function is combined into one team called board of directors. Second type of the board is two tier board system. The two tier board system separate the function of executive board and supervisory board. According to The Law No 40 of 2007 about "Limited Liability Company", Indonesia adhere to two tier system. Executive function of the board is conducted by board of directors while the supervisory function is by board of commissioner. The board of director is responsible for managing company business and reported the business performance for various stakeholder. The board of commissioner is responsible for monitoring the company policies, overseeing running of the business and giving advice or counsel to the company management.

In the agency theory, earning management is frequently seen as a manifestation of agency problem that should be obviated by effective monitoring.

Diversity of the board increase the quality of board monitoring towards management (Hooghiemstra et al., 2019). The diverse board can gain because of superior cognitive skills and reduce the group think to improve independency.

This research intended to examine the effect of board relation oriented diversity and task oriented diversity on earning management. This research inspired from previous research by Gull et al. (2018) which examine the relationship of board gender diversity and its attribute on earning management. The research shown there is relationship between board gender diversity and several board attributes on earning management. The difference of this research from the previous one is first, this research use other diversity attribute as independent variable. This research following independent variable from research by Harjoto et al. (2018) which use relation oriented diversity and board task-oriented diversity as independent variable. In this research the board relation-oriented diversity attributes consist of gender, age, and ethnicity while board task-oriented diversity consist of tenure and expertise.

Second, this research used different measurement of board diversity. The research of Harjoto et al. (2018) used Blau index to show the board heterogeneity. The heterogeneity index from Blau combines all of the diversity attribute. The diversity attribute of board relation oriented diversity is board age, board gender, and board ethnicity or race. The diversity attribute of board task oriented diversity is board tenure and board expertise. Instead of using the heterogeneity from Blau index calculation, this research analyze individual attribute of each board diversity. This research use proxy of board age, board gender, and board nationality in measuring

board relation oriented diversity while board task oriented diversity is measured using proxy of board expertise and board tenure. The reason not to used Blau index from Harjoto et al. (2018) index is because to get the index value of board relation oriented diversity and task oriented diversity there are many element of each attribute and the element on board ethnicity and board expertise is hard to find because the limited information from annual report of manufacture companies in Indonesia. Ethnicity attribute in this research is replaced with nationality because, ethnicity is harder to identify since in Indonesia there are over than 300 ethnical group (Miaschi, 2019) and not to mention the ethnicity of the foreign board. In addition the data source to collect information of ethnicity is dispersed.

Third, This research add upper echelon theory by Hambrick and Mason (1984) and resource dependence theory by Pfeffer and Salancik (1978) as the explanation. This upper echelon stated that the executive background characteristics may predict company outcome. One of the company outcome in upper echelon theory is profitability which can be stated as earning in financial statement. The resource dependence theory stated that the company is dependen on its external resource and establishment of board could give benefit.

The term of board on this research refers to the board of comissioner who has authority to monitor the management or board of director decision and activity. The usage term board instead board of comissioner aimed to avoid confusion because of the difference board system in Indonesia and in another countries that become object studies of previous reseach as basis of this research.

1.2 Research Problem Formulation

According to research background describes, the research problems are:

1. does board relation oriented diversity relates to earning management?
2. does board task oriented diversity relates to earning management?

1.3 Research Objective

The objectives of this research are to examine whether there is empirical evidence which shown the relationship of:

1. board relation oriented diversity and earning management
2. board task oriented diversity and earning management

1.4 Research Contribution

This research is expected to contribute as follow:

1. empirical contribution

This research is expected to gain wider understanding about theories application in analyzing relationship between of board relation-oriented diversity and board task-oriented diversity to earning management.

2. practical contribution

- a. For the researcher, this research is expected to increase understanding about relationship between board relation-oriented diversity and board task-oriented diversity to earning management,
- b. For company stakeholder, this research is expected to give basic considerations in determining board composition and policy so that executive and monitoring function of the board will be work effectively

- c. For academician, this research is expected to serve further reference to conduct future researches in similar topic

1.5 Writing Systematics

This research systematic is made to arrange and easily understand parts of research proposal. Proposed research systematic is arranged as follow:

CHAPTER 1 INTRODUCTION

This chapter describes background of this research which importance of reliable financial report to the external stakeholder. Then it goes to the detrimental effect of earning management to reliability financialy reporting and closed the idea of examining board relation oriented diversity and board task oriented diversity relates to earning management. Based on the background the researcher formulates research problems, research objectives, and research contributions. Finally, this chapter explain about the research systematics.

CHAPTER 2 LITERATURE REVIEW

This chapter describes theories used on research, hypothesis development, previous research and conceptual framework. The theories used on this research are agency theory , upper echelon theory and resource dependence theory. In this research there are five previous studies than become basis for developing the research. Those five studies are used to propose conceptual framork of the research.

CHAPTER 3 RESEARCH METHODOLOGY

This chapter describes research approach which is quantitative approach, variable identification, type and source of data, population and sample, data collection method, and data analysis method. The independent variables used for this research are board relation oriented diversity and board task oriented diversity. The board relation oriented diversity measure using proxy of board gender, age, and nationality. The board task related diversity measured using proxy of board tenure, and expertise. The dependent variable is earning management. Control variables are leverage, board size and firm size. The hypothesis is examined using ordinary least square regression (OLS) and robust regression in STATA 14.0 software.

CHAPTER 4 RESULT AND DISCUSSION

This chapter describes result of analysis that has been stated in chapter 3. The beginning of this chapter describe the research object and provide the descriptive statistic of each variable. Then there is explanation for the result of pearson correlation test, multicollinearity test, heteroscedasticity test, normality test and autocorrelation test. The result of hypothesis testing using OLS and robust regression provide several empirical evidence. In the variable of board relation oriented diversity, board gender has found that there is negative significant effect on earning management. The board task oriented diversity has found that board tenure has significant effect on earning management while board expertise provide positive significant effect on earning management.

CHAPTER 5 CONCLUSION AND RECOMMENDATION

This chapter describes conclusion of research result which has been conducted. The conclusion drawn from this research is both board relation oriented diversity and board task oriented diversity have effect on earnings management. In this research. This chapter then provides the research constraints and suggestions for following research in similar topics.

CHAPTER 2

LITERATURE REVIEW

2.1 Theoretical Basis

2.1.1 Agency Theory

Agency theory is popularized by Jensen and Meckling (1976). It reveals contractual agency relationship between principal and agents. Principal is party whose resources will be used in company, while agents are those given authority to manage company resources. This agency relationship defined as a contract of the principal to engage agents to perform some service on behalf of the principal. The principal delegates authority to the agent for decision making on behalf of principal's welfare. The delegation of authority from the principal to the agent could generate a problem called agency problem. Eisenhardt (1989) stated that rising of agency problem in agency relationship is caused by principal and agent have difference on desired goal and difficulty or expensiveness for the principal to verify what agent is actually doing. The reason is in line with the agency theory which argue that both principal and agent could be utility maximizer. If both parties are utility maximizer, there is good reason that agent will acts not always on behalf of the principal's interest.

Agency problem in agency relationship generates agency cost as a reaction form principal in effort to monitor the agent. Jensen and Meckling (1976) defines agency cost as the sum of the (1) monitoring expenditures by the principal, (2) the bonding expenditures by the agent, and (3) the residual loss. It is impossible for the

company to have zero agency cost because there always a difference of interest. Monitoring expenditure or monitoring cost is the expenditure of principal obtained for monitoring the agent. Agent monitoring includes the way of measure, observe and controlling agent behavior. Bonding expenditure or bonding cost is expenditure of agent to commit on certain activity and comply on mechanism that ensure agent will conduct the activities on behalf of principal interest. Residual loss is sacrifice in form of decrease on principal welfare as a result of difference decision made by agent and principal.

Agency theory is built based on three human basic characteristic assumptions which consist of self-interest, bounded rationality, and risk aversion (Eisenhardt, 1989). Both principal and agent has self-interest under the agency relationship. Principal expects increase of the economic welfare on the resource and authority given for the agent to be managed. The agents besides has obligation to perform services for principal, they have tendency to gain personal benefit. The personal benefit for the agent can be material or non-material. Bounded rationality is the concept when the people make rational decision within limited information available and mental capabilities (Simon, 1972). In agency theory the agent has more information rather than the principal. Agent as the first hand conducting activities on managing company resources knows more about the company daily operation. The agent then reported to the principal about the company operation and principal make decision based on the report. This situation make the information imbalance or asymmetrical information. This asymmetrical information could result different risk preferred by the agent and principal. Risk

aversion appears in agency problem because of relationship between risk and return. Principal generally accepts higher risk. Higher risk for the principal is sign that there is potential of higher return. Conversely, agent usually prefer less risk because it is related to the source of income. Agent is paid by the principal on fixed amount based on contract and additional bonuses if the performance is above the principal expectation. However, people tend to be risk averse to make security of the position. Higher risk taken could harm the agent performance. If the agent take too much less risk it will lead to stagnant economic welfare for the principal.

The three human basic characteristic assumption can make the agent behave opportunistically by prioritizing personal benefit (Agustia, 2013). Principal trusted the financial sources for the agent with expectation those sources will increase economic welfare. The agent who involved in company daily operation has authority to managing those resource and provide reliable report in form of financial statement. The principal use financial statement to get information about the economic welfare and evaluating agent performance. The agent performance is reflected on company earning. Principal will give bonuses if the agent performance is beyond expectation and it is a good news for the agent. Muljono (2008) stated that the authority given for the management (agent) drive the tendency of management to play on accounting number within financial report to meet certain level of earning preferred by agent. Because of this behavior, the financial statement which intended to inform the principal about company economic condition is not reliable.

Jensen and Meckling (1976) suggested solution for reduce asymmetrical information between agent and principal by establishing appropriate incentives for the agent and by incurring monitoring cost designed to limit inappropriate behavior. In practice, the company uses resources to alter the opportunity the owner-manager has for capturing non-monetary benefit for management. The methods include auditing, formal control system, budget restriction, and establishment of incentive compensation system which will make the agent and principle interest get more closed. By incurring monitoring cost, it is proven that agent consumption of non-pecuniary benefit.

2.1.2 Upper Echelon Theory

Upper echelon theory popularized by Hambrick and Mason (1984) has the main idea that organizational outcome that consist of strategic choice and performance level are predicted by executives background characteristics. The executives act on the basis of the personalized interpretation of the strategic situation which faced and the personalized interpretations are a function of the executives experience values and personalities (Hambrick, 2007). The theory of upper echelon initially analyze the characteristics of top executive which is chief executive officer (CEO) because the CEO has great authority for decision making. Although that the most CEO has most power in company but the studies of executives as a team increase the potential strength of the theory to predict, because the CEO will share task, some extent and power with other team member (Hambrick and Mason, 1984) .In other words this theory proposed that the all executive

members do have an account on the companies outcome. Barnard (1968) argues that upper echelon study also emphasize the effort of cooperation throughout the team and based on belief that the team is very important to be special job sustaining the organization in operation. Because of this reason the theory of upper echelon also applied in executive members in the company. In the Indonesia company the executive team can be inferred to the board.

The characteristics that being primary emphasize in the upper echelon theory is observable characteristics such as age, tenure in the company, functional background, education, socioeconomic roots and financial position. This characteristic more emphasize on background rather than psychological dimension. The reason using background characteristics is the cognitive base, value and perception of upper echelon is not convenient to measure or even amendable to direct measurement (Hambrick and Mason, 1984). Another reason is some of background characteristic such as tenure and education do not have psychological analogy.

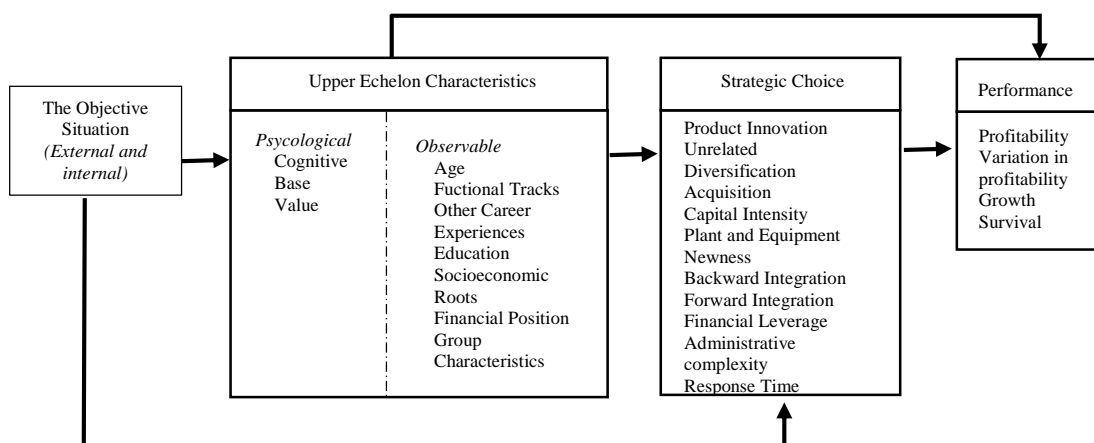


Figure 2.1

Upper Echelon Perspective of Organization

Source : Hambrick and Mason (1984)

According to the figure 2.1, the board characteristics could have influence on earning management since the earning management is part of company performance in term of profitability. It can affect directly to the company earning or indirectly through strategic choice.

2.1.3 Resource Dependence Theory

Resource dependence theory by Pfeffer and Salancik (1978) stated that the organization is depend on the external resources. Nienhuser (2008) explain the beginning concept of resource dependence theory is that the environment provides critical resources for organization. The critical resources are valued by the ability to provide organization functioned continually. The company has limited rationality in formulating and solving complex problem or processing information. This limited ability of company needs resources from external party. Too much dependency on external party's resources can generate great uncertainty for the company. The company tries to reduce uncertainty because if organization is exposed more by external resources external party will has more power. Concept of power distribution is applied both inside and outside organization to decrease uncertainty. Management make decision based on how environmental requirements can be managed, so the management can legitimize their power to the external party. If the environment is changed it also can affect power inside of company. Power which owned by internal party of company, especially administrative personnel can be used in executive succession mechanism. Power which owned by

external party is can be used to influence the composition of company's organization structure. All of decision made gave feedback for the company.

The main purpose of company on this theory is to reduce dependency on external environment. In order decrease it, the resource dependency theory propose five option and one of the option is board of director (Hillman et al., 2009). According to this theory, the reason when the individual is appointed to be a board member, it is expected that individual will support the organization, concern himself with its problem, and try to aid it. It is argument of Pfeffer and Salancik (1978) that the board of director will brings benefit such as (1) information in the form of advice and counsel , (2) access to channel of information between company and environment (3) preferential access of resources and (4) legitimacy. Those benefits are expected to give effective channeling method in looking for external resources needed by the company. Hilman and Dalziel (2003) categorize the resource of these benefit as directors human capital (e.g expertise, skill, knowledge, and reputation) and relational capital (e.g resource available through a network of relationship) .

2.2 Previous Research

The previous studies that become basis of this research are describe in this section. Harjoto et al. (2018) which examined the board diversity and corporate investment oversight. Harjoto using sample of 15.124 firm-year accross 1898 firm from 1998 – 2014 in United States. The board Diversity consist of board relation oriented diversity and task oriented diversity. The board relation oriented diversity has three element they are board gender, board race, and board tenure while board task oriented diversity consist of two element namely board tenure and board expert. Each of the element is measured its heterogeneity by Blau index. Then, index value of each element is added up to get board relation oriented diversity and board task oriented diversity value. The result of this research shown that the board task oriented diversity is more effective in overseeing corporate investment activities than homogenous boards. This research has similarity with the Harjoto et al. (2018) in terms of the independent variable used. The difference is the dependent variable because this research examine the earning management in Inconesia manufacture companies.

Research by Gull et al. (2018) examine the relationship of woman directors and its attributes on earning mangagemet. One of the woman attribute mentioned on the research is woman directors experience measured by tenure and multiple directorship The research use sample of compnies listed on the Euronext Paris CAC All-haresIndex with trading volume higher than 5% of share capital during period 2001 to 2010. The research found that the presence of woman directors were deter manager from managing earning and the woman director experience measured by

tenure and multiple directorship is effective monitoring to earning management. This research has similarity with Gull et al. (2018) on independent variable and control variable used. The difference is (Gull et al., 2018) focus on the attributes owned the woman board while this research consider all of the board members.

Research by Du et al. (2017) examine the effect of foreign directors on earning management in China. The measurement used for for the foreign director use the dummy variable for the presence of foreign directors and ratio of foreign directors. Using sample of all A-share companies from 2004 – 2012 in China, it found that the presence and the ratio of foreign directors are negatively associated with earning management. The similarity of this research with Du et al. (2017) is examination of foreign board to earning management. The difference is in the model used for estimating earning management. This research use Modified Jones Model by Dechow et al. (1995) while Du et al. (2017) used Augmented Jones Model by Ball and Shivakumar (2006).

Research by Xiong (2016) examine the chairman characteristics and earning management in Chinese listed companies. The chairman as the head of board of directors and legal representative in Chinese companies is depicted with attribute of gender, tenure, age and education. The research use all companies listed Shenzhen and Shanghai stock exchange during 2005 to 2014 except for financial companies. The result shown that the the companies with female, long tenured, older and more educated chairman engage in less accrual based and real earning management. The similarity of this research with Xiong (2016) is the independent variable used on the research which are tenure, and gender and independent variable

(earning management) The difference of the researches is first, Xiong (2016) focus on the characteristics of board chairmen while this research use all of the board member. Second, Xiong (2016) used accrual based and real earning management while this research only used accrual based.

Research by Xie et al. (2003) examine the relationship of corporate governance and earning management. The corporate governance part emphasized on the audit committee, board of directors, and executive committee. The research use sample of 110 companies from S&P (Standard and Poor's) 500 index in the year of 1992, 1994, and 1996. The research provide evidence that the board of directors and audit committee members with corporate or financial background are associated with firm that have smaller earning management. This similarity of this research with Xie et al. (2003) is both examine the effect of board with financial expertise on earning management. The difference is, beside considering the financial expertise this research also considering accounting expertise.

2.3 Hypothesis Development

2.3.1 The Board Relation Oriented Diversity and Earning management

Agency theory by Jensen and Meckling (1976) suggest a monitoring cost by principal (owner) to reduce asymmetrical information within company. The less asymmetric information will prevent management conduct opportunistic behavior such as earning management. The monitoring authority of principal to management is given for the board in the company. According to Harjoto et al. (2018) board relation oriented diversity with its attributes are predicted can enhance board monitoring. Harjoto et al. (2018) define board relation oriented diversity consist of age, gender and ethnicity. Due to the effect on board monitoring, the board relation oriented diversity e predicted affect earning management. From the explanation, the first hypothesis is :

H1: Board relation oriented diversity has effect on earning management

To examine the hypothesis, this research using individual attribute as proxy for board relation oriented diversity. The reason of using individual proxy for board relation oriented diversity is because Blau index in Harjoto et al. (2018) is can not apply if using the available research data. The first proxy is board age. According to upper echelon theory the upper echelon such as the board member with its characteristic on age can has impact on organizational outcome. The older executives has conservatism stance rather than the young because rise older executives are at the point when their lives are financially secure and career reputation is important, so that any risky actions that may harm their reputation it is avoided (Hambrick and Mason, 1984). The older board also has more mature

cognitive skill and wisdom. Since the earning management is non risky action, the board age may relate to earning management. The previous research about the board age on earning management examined by Xiong (2016) provide the result that the presence of older board member, the earning management is reduced. From the explanation, the proposed hypothesis is :

H1a: Board age has negative effect on earning management.

Second proxy is board gender. Resource dependence theory stated that the board brings several benefit to the company in term of providing advice and conseil, channel to access information between company and external environment, preferential access of resource and legitimacy. Pelled et al. (1999) stated that different gender posses different norms, beliefs, attitude and perspective. One of the difference in the gender in organization can be in the form of perspective in desicion making and risk preference. Woman is more risk more averse compared than man (Barber and Odean, 2001). Risk averse nature of the woman in the business contex is related to the ethical value which held by the woman. Betz et al. (1989) found that woman are more ethical in the workplace and less likely to engage in unethical behavior to gain financial reward. Because of this ethical nature Krishnan and Parsons (2007) reveal that woman are less tolerant of opportunistic behavior when making organizational decision. The woman not only has tendency to avoid risk but also better on obtaining voluntary information which may reduce information asymmetry between female director and managers (Gul et al., 2009). This condition tend to restrain earning management practice in the company. Previous research by Gull et al. (2018) found that presence of woman on board of

director can deter manager to manage earning. From the explanation, the proposed hypothesis is:

H1b: Board gender has negative effect on earning management.

Third proxy is board nationality. Resource dependence theory by stated that the board brings several benefit to the company in term of providing advice and consel, channel to access information between company and external environment, preferential access of resource and legitimacy. The board with foreign member brings particular benefit for the company. Ruigrok et al. (2007) provide evidence that the establishment of the board with the foreign member provide the benefit of independency on the board because the board is seen as internal governance mechanism aiming at monitoring managerial behavior and quality of managerial decision. The independency is arise because the board members are not come from the same pool of local director. As the board come from different on local director, the board member is exposed more on openness and frankness in performing monitoring task rather than giving priority to politeness and courtesy among the board members (Oxelheim and Randøy, 2003). Moreover the foreign board of director may help prevent high level of cohesiveness in the board (Forbes and Milliken, 1999). Another argument the that the foreign director on board could enhance its monitoring function because that foreign board are more skeptical to limits executive power Choi and Wong (2007). The limitation of executive power lead to the constriction to the ability of management to do oportunistic behavior. The previous researches have provided empirical evidence about the relationship of board nationality to earning management. Du et al. (2017) on previous research

found that the presence and ratio of foreign director is negatively associated with earning management. From the explanation the proposed hypothesis is:

H1c: Board nationality has negative effect on earning management

2.3.2 The Board Task Oriented Diversity and Earning Management

Resource dependence theory by Pfeffer and Salancik (1978) stated that the board brings several benefit to the company in term of providing advice and consel, channel to access information between company and external environment, preferential access of resource and legitimacy. The research conducted by Harjoto et al. (2018) provide evidence that the board can give benefit for company in investment monitoring. Harjoto et al. (2018) found that board which diverse in task oriented attribute can increase board monitoring and the attribute of task oriented diversity consist of board tenure and expertise. Due to the effect of board task oriented diversity on board monitoring, it can be predicted that board task oriented diversity also affect earning management. The hypothesis based on the explanation is :

H2: Board task oriented diversity has effect on earning management

To examine the effect of board task oriented diversity on earning management, this research use individual attribute as proxy. The first proxy is board tenure. Experiences give the board member individual competence to take proper decision within complex environment (Kesner, 1988). According to resource dependence theory by Pfeffer and Salancik (1978) the board brings benefit term of providing advice and consel, channel to access information between company and

external environment, preferential access of resource and legitimacy. Hilman et al. (2000) argues that every board has distinct characteristics which come from individual experience or occupational attributes. Those experience attributes can affect the board behavior which may turn to affect board monitoring ability to the management. Tenure usually used as measurement for the experience. Tenure of board members can determine the level of experience on handling the company business including financial decisions. The exact decision on board of directors could turn to good firm performance and board image in public view thus it may reduce opportunistic behavior because the public is more aware of the company. The experience of board commissioners also enhances board monitoring because the board member is familiar with board of directors' behavioral characteristics. Short term periods in board positions let the board know management behavior on a surface level, but in the long term the understanding is more complex. Bedard et al. (2004) stated that the experience of independent directors on the company's board can develop their monitoring competencies while providing them with some firm-specific expertise such as knowledge of the company's operations and its executive directors. Thus, as the experience increases, the board becomes more effective at overseeing the firm's financial reporting process. Peasnell et al. (2005) found that board monitoring can increase the integrity of financial reporting presentation. The monitoring on board of directors may be beneficial for deterring earnings management. It is because integrity could make the numbers within financial statements reliable and earnings management the one that misleads the user. Previous research by Xiong (2016) found that board chair characteristics on earnings management of China

Listed Companies from 2004 to 2015. One of the characteristics mentioned was tenure. The result proved that firms with long-tenured and more educated chairman engage in less earning management. Based on the explanation, the proposed hypothesis is :

H2a: Board tenure has negative effect on earning management

Second proxy is board expertise. Earning management practice needs knowledge and skill in accounting (García-Sánchez et al., 2017). Resource dependence theory by Pfeffer and Salancik (1978) board brings benefit term of providing advice and counsel, channel to access information between company and external environment, preferential access of resource and legitimacy. The benefit given by the board can be obtained by the difference characteristics of each board such as expertise, skill and information owned (Hilman et al., 2000). The accounting skill is obtained from the specific expertise which relate to it. Some of those expertise are in the company position such as auditor, controller, accounting staff, finance manager or finance director. Accounting or finance expert are supposed to have ability to oversee accounting controls and the financial reporting of the company, so it can prevent reporting failure, litigation, and scrutiny of policy maker (García-Sánchez et al., 2017). In the boardroom, financial expertise argued have lower cost in acquiring information about complexity and associated risk of certain financial transaction and it is form for effective monitor to senior manager (Harris and Raviv, 2006). Due to its ability to reduce the cost to acquire information on transaction and failure of report the earning management level might be low. The previous research by Xie et al. (2003) found that the relationship of board and

audit committee membership with corporate and finance background is significantly negative with earning management. From the explanation, proposed second hypothesis is:

H2b: Board expertise has negative effect on earning management.

2.4 Conceptual Framework

Figure 2.2 shows the relation among variables in this research. This research use attributes of board relation-oriented diversity (age, gender and nationality) and task-oriented diversity (tenure and expertise) as independent variable and earning management as dependent variable. This research looking for direct relationship between independent variable and dependent variable. To limit other external factors on the examination the researcher uses board size, firm size and leverage as control variables.

This research uses three theories to explain the relationship among variables. First, agency theory by Jensen and Meckling (1976) describe the relationship between principal and agent that results asymmetrical information. Because of this asymmetrical information the agent which has more information than principal could deceive the external party through earning management. To reduce the asymmetrical information, monitoring cost by principal is crucial. The monitoring cost of the principal could be conducted by establishing formal control system through the board. Board diversity is mentioned as the way to enhance board monitoring. Second, the Upper Echelon by Hambrick and Mason (1984) suggest that the board characteristics such as age can play role on the organizational

outcome. From the perspective of this theory the board age can affect profitability of the company which is stated as earning in financial statement. Third, the theory of resource dependence plays role on the effect of monitoring of the board. The Resource Dependence theory by Pfeffer and Salancik (1987) stated board brings benefit for the company because in this theory stated that appointment board is important to increase board independency. The independent board might result in less engagement on earning management. The previous research of individual attributes of board relation oriented diversity and task oriented diversity stated in the hypothesis shown that they has effect on earning management. Because of this reason this research construct following framework :

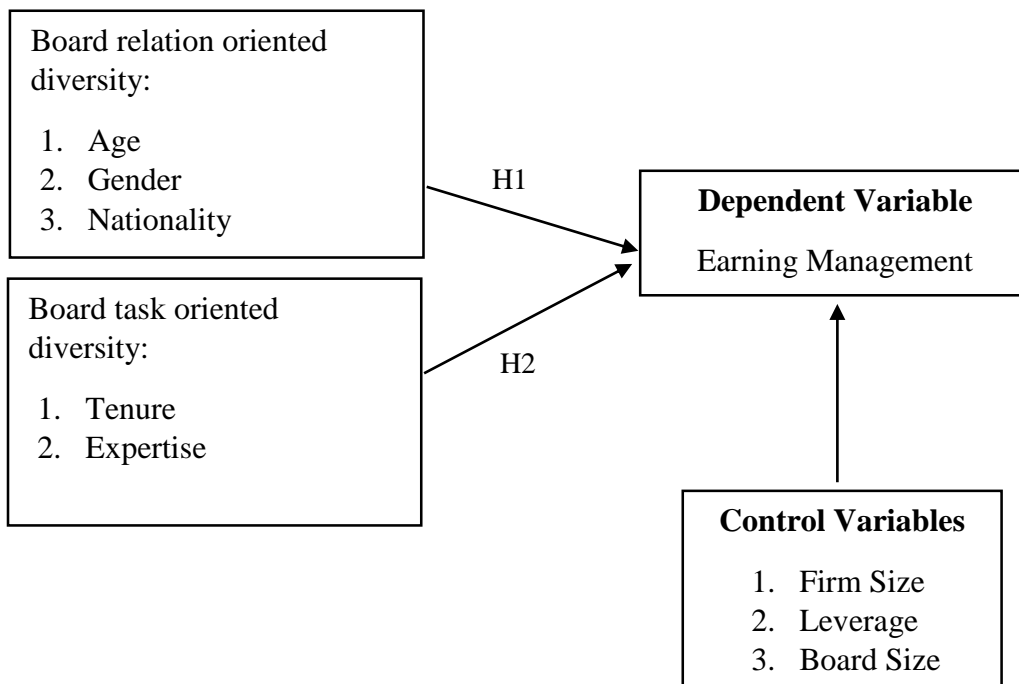


Figure 2.2
Conceptual Framework

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Approach

This research uses quantitative approach with explanative format. Quantitative approach is type of research approach which obligated the usage of numbers, starting from data collection, interpretation of the data and presentation of result (Arikunto, 2006). Explanative format is intended to describe a generalization or relationship between of one variable to other variables, thus this format tries to examine hypothesis with inferential statistics (Bungin, 2013). This research examines the effect of board relation oriented diversity and board task oriented diversity on earning management within the company.

3.2 Variables Identification

Based on hypothesis development and conceptual framework, variable used on this research consist of dependent variable, independent variable, and control variable. Dependent variable for this research is earning management. Independent variable for this research is board diversity which consist of board relation oriented diversity and task oriented diversity. Control variable for this research are firm size, leverage and board size.

3.3 Operational Definition of Variable

3.3.1 Dependent Variable (Earning Management)

Earning management is action of management that used judge in providing financial report during transaction process or estimation for either misleading stakeholders about company's underlying economic performance or influence contractual outcome which decided based on financial reports (Healey and Wahlen, 1999). Earning management measured by discretionary accrual which reflect the accrual value that depend on management discretion.

This research use modified jones model to estimate discretionary accrual as detector of earning management. Modified jones model initially developed by Jones (1991) and modified by Dechow et al. (1995). The modified jones model is the most popular model used in accounting research because it assessed giving the best and most robust result (Sulistiawan et al., 2011). Discretionary accruals on modified jones model is measured by following steps:

$$TA = NI - CFO \dots\dots\dots (3.1)$$

The total accrual (*TAC*) is estimated using OLS regression equation as follow:

$$\frac{TA_t}{A_{t-1}} = a_1 \left(\frac{1}{A_{t-1}} \right) + a_2 \left(\frac{\Delta REV}{A_{t-1}} \right) + a_3 \left(\frac{PPE_t}{A_{t-1}} \right) + v_1 \dots\dots\dots (3.2)$$

With the regression coefficient from above equation, nondiscretionary accrual

(*NDA_t*) value is calculated by following formula:

$$NDA_t = a_1 \left(\frac{1}{A_{t-1}} \right) + a_2 \left(\frac{\Delta REV - \Delta REC}{A_{t-1}} \right) + a_3 \left(\frac{PPE_t}{A_{t-1}} \right) \dots\dots\dots (3.3)$$

The discretionary accruals (DA_t) can be calculated by following formula:

$$DA_t = \left(\frac{TA_t}{A_{t-1}} \right) - NDA_t \dots\dots\dots (3.4)$$

Descriptions:

TA or TA_t	= total accruals in period t
NI	= net income in period T
CFO	= cash flow from operation in period t
A_{t-1}	= total asset in period t-1
ΔREV	= changes of net sales in period t
ΔREC	= changes of net receivable in period t
PPE_t	= property, plant, and equipment (gross) in period t
NDA_t	= nondiscretionary accrual
DA_t	= discretionary accrual
a_1, a_2, a_3	= coefficient for regression estimation in formula (3.2)

The result of discretionary accrual used in this research is absolute value of discretionary accrual (Abs_DA_t) because this research only focus on the level of earning management or do not considered the positive or negative sign.

3.3.2 Independent Variable

3.3.2.1 Board Relation-oriented Diversity

Board Relation-oriented diversity is the composition of the company board as a team which vary on the social cognitive process, stereotypes and schema based expectancies (Jackson et al., 1995). Based on Harjoto et al. (2018) board relation oriented diversity has three attributes namely age, gender, and ethnicity. This research expand the measurement of board relation oriented diversity variable using proxies with consideration of the attributes. This research use three proxies they are board age, board gender, and board nationality. In this research, there is replacement of ethnicity attribute by (Harjoto et al., 2018) with nationality. It is conducted because in a nation there are major ethnical group that dominate and the major ethnicity from one nation differs from another. For example in Indonesia the major ethnical group is Javanese and it is about 40% of the population (Miaschi, 2019), in Malaysia the major ethnical group is malays and it is account for 50.1% population (Sawe, 2019) and in India the major ethnical group is Indo-Aryan which account for 72% of the population (Sousa, 2019). Because of this reason, the diverse nationality can reflect the diversity ethnicity. The description of those three proxies are presented below:

a. Board Age (BAGE)

This research use measurement of board age from Xu et al. (2018) who calculate board age by the average age of a group members. The measurement of board age is stated on the following formula:

$$\text{BAGE} = \text{Average age of board members}$$

b. Board Gender (BGEN)

This research follow research form Gull et al. (2018) about gender diversity to measure the board gender. The board gender is stated by following formula:

$$\text{BGEN} = \frac{\text{number of woman directors}}{\text{total member of directors on board}}$$

c. Board Nationality (BNAT)

This research use measurement of board nationality from Gull et al. (2018) who calculate board woman nationality by the proportion. The measurement of board nationality is stated on the following formula:

$$\text{BNAT} = \frac{\text{number of foreign directors}}{\text{total member of directors on board}}$$

3.3.2.2 Board Task Oriented Diversity

Board Task oriented diversity is the composition of the company board as a team which vary on the information processing, learning process, task-based information, power to control tangible resources and power to control human resources (Jackson et al., 1995). The task oriented diversity in Harjoto et al. (2018) consist of two attributes namely tenure and expertise. Therefore this research used two proxies to measure board task oriented diversity. Those two proxies are describe below :

a. Board Tenure (BTEN)

This research measure board tenure follow Gull et al. (2018) about gender diversity. The measurement of board nationality is stated on the following formula:

BTEN = Average years the members have been on board

b. Board Expertise (BEXP)

The measurement of board expertise in this research following Sharifah (2012) who use board member who has professional qualification in accounting and finance. The professional qualification of board member in accounting and finance is measured by the professional degree which held by the board member, the certification held by the board or previous experience in accounting and finance field. The position that considered to determine whether the board member has accounting and finance experience are accounting or finance division staff, finance manager, controller, finance director. The measurement of board expertise is stated in the following formula:

$$BEXP = \frac{\text{number of directors with accounting and finance expertise}}{\text{total member of directors on board}}$$

3.3.3 Control Variable

3.3.3.1 Firm Size (FSIZE)

Firm size is the categorization of company as big or small through various measurement method (Suwito and Herawaty, 2012). This research following Gull et al. (2018) use the natural logarithm of total asset as the measurement method. The formula is stated below:

$$FSIZE = \text{Ln Total Asset}$$

3.3.3.2 Leverage (LEV)

Leverage is company policy intended to either invest fund or obtain funding sources with the consequences of fixed cost as the company responsibility

(Irawati, 2006). The leverage proxy used on many research such as Agustia (2013) is the proportion of total liabilities to total asset. The formula is stated below.

$$LEV = \frac{\text{Total Liabilities}}{\text{Total Asset}}$$

3.3.3.3 Board Size (BSIZE)

Board size is the members sitting on board within the company (Beiner et al., 2004). Board size is measured following Gull et al. (2018) by total number of members on board as following formula:

$$BSIZE = \text{Total number of board members}$$

3.4 Type and Source of Data

The type of data used in this research is secondary data. The secondary used is obtained from ORBIS database and annual report of manufacturing company listed in Indonesia Stock Exchange for the period 2013 – 2017 which downloaded from Indonesia stock exchange (www.idx.co.id) and company official website.

3.5 Data Collection Procedure

The procedure for collecting data in this research is with the acquisition of secondary data from existing sources. Secondary data used in this research is obtained from ORBIS database and annual report of manufacturing company listed in Indonesia Stock Exchange for the period 2013 – 2017 which downloaded from Indonesia stock exchange (www.idx.co.id) and company official website.

3.6 Population and Sample

The population of this research is all of manufacturing companies listed in Indonesia Stock Exchange for the period 2013 – 2017. The population of this study consist of 955 year companies.

Sample used in this research is purposive sampling method based on judgment. According to Indriantoro and Supomo (1999) purposive sampling method based on judgment is a method to determine the sample of research using certain criteria according to researcher's goal. The criteria for the sample are stated below:

1. Manufacture companies listed in Indonesia Stock Exchange for the year 2013, 2014, 2015, 2016, and 2017
2. Companies have completed data and information needed to conduct this research

From the purposive sampling on the manufacture companies, the result provide sample for the research in amount of 464 year companies. The amount of sample in each year is shown in Table 3.1.

Table 3.1
Total Sample

No	Criteria	Amount					Total
		2013	2014	2015	2016	2017	
1	Manufacturing company listed in Indonesia Stock Exchange	142	144	146	149	159	740
2	Exclude : Companies with incomplete data needed for this research	54	47	44	45	86	276
Total Sample		88	97	102	104	73	464

3.7 Analysis Technique

The analysis techniques used in this study is descriptive statistical analysis, Pearson correlation test, normality test, heteroscedasticity test, multicollinearity test, and multiple regression analysis test. This research conduct the analysis technique with the help of STATA 14 software.

3.7.1 Descriptive Statistical Analysis Test

Descriptive statistical analysis test is the test aimed for explaining data distribution of the variables examined (Indriantoro and Supomo, 1999). The descriptive statistic test is presented in less simple form to make the data understandable.

3.7.2 Pearson Correlation Test

Pearson Correlation is a parametric measurement that will produce a correlation coefficient which function is measure the strength of linear relationship between two variables (Latan, 2014). Pearson correlation value range from 1 to -1. Value of 1 perfect positive relationship between two variables, where the value -1 indicates the perfect negative relationship between two variables.

3.7.3 Normality Test

Normality test has objection to test regression model whether it has normal distribution or not. The assumption for good regression result is that the data are normally distributed (Ghozali, 2006). It is important to meet this

assumption for t-value test to be valid. This research use the graphical and statistical normality. Graphical normality test is conducted by looking at the histogram and normality p-plot graph of the residual value from multiple regression analysis test. Statistical normality test used in this research is used Skewness and Kurtosis Test. This test is examine the residual value of regression model. Significant level taken of this test is 0.05. The data is categorized as normal if the probability $>$ chi2 is greater than 0.05.

3.7.4 Heteroscedasticity Test

Heteroscedasticity is the presence of different residual value variance in the regression model among the observation (Ghozali, 2006). If variance of residual from one observation is equal to other observation, it called homoscedasticity. A heteroscedasticity test has objection to test whether the regression model has any variance inequality from observation residual.

The heteroscedasticity test used in this research is Breusch-Pagan Test or Cook-Weisberg Test. The regression model is free from heteroscedasticity problem if the value the probability $>$ chi2 is greater than 0.05.

3.7.5 Multicollinearity Test

Multicollinearity test has objection to assess whether any inter-correlation between independent variables in the regression model. Inter-correlation is the condition in which the independent variables are having linear

relation or strong relation. When two or more variable involved in the condition, it called multicollinearity.

Multicollinearity is identified by multicollinearity test in regression by value of Tolerance and Variance Inflation Factor (VIF). Value of tolerance means the variability of chosen variable which not explained by another independent variable. Tolerance value is opposition of ($\text{Tolerance} = 1/\text{VIF}$). General cut off to show the presence multicollinearity is 10%. The regression model is indicated have no multicollinearity issue if $1/\text{VIF}$ value > 0.10 and $\text{VIF} < 10$.

3.7.6 Autocorrelation Test

Autocorrelation is the problem which arise if the error residual from two or more observation is intercorrelated (Latan, 2014). Autocorrelation test is conducted using Durbin Watson test. The Durbin Watson test will result on Durbin Watson (d) value that will be compared to two values, named durbin upper (du) and durbin lower (dl). The decision making for autocorrelation problem is analyze using following table.

Table 3.2

Decision Making to Detect Presence of Autocorrelation

H0	Decision	Condition If
There is no positive autocorrelation	rejected	$0 < d < dl$
There is no positive autocorrelation	No decision	$dl \leq d \leq du$
There is no negative autocorrelation	rejected	$4-dl < d < 4$
There is no negative autocorrelation	No decision	$4-du \leq d \leq 4-dl$
There is no positive and negative autocorrelation	accepted	$du < d < 4-du$

Source : Ghozali (2006)

3.7.7 Multiple Regression Test

This research examine the model using multiple linear regression analysis by STATA 14. Multiple regression analysis is chosen because multiple regression analysis test is the test that used for examining the relationship of two or more independent variables to one dependent variables with interval or ratio measurement data scale (Indriantoro and Supomo, 1999). The regression model used to test the hypothesis in this study is formulated as follows:

$$DA_t = \beta_0 + \beta_1 BAGE + \beta_2 BGEN + \beta_3 BNAT + \beta_4 BTEN + \beta_5 BEXP \\ + \beta_6 FSIZE + \beta_7 LEV + \beta_8 BSIZE + \varepsilon$$

Descriptions:

DA_t = Earning Management (Discretionary Accrual)

β_0 = Constanta

$\beta_1 \dots \dots \beta_9$ = Regression coefficient

BAGE = Board age

BGEN = Board Gender

BNAT = Board Nationality

BTEN = Board Tenure

BEXP = Board Expertise

FSIZE = Firm Size

LEV = Leverage

BSIZE = Board Size

ε = error

The Hypothesis testing of this regression result is conducted by looking at t-value with significance value of 0.1, 0.05, or 0.01. If the significant value is lower than 0.1, then the hypothesis developed are accepted. Otherwise, if the significant value is higher than 0.1, the hypothesis developed are not accepted.

This research used two regression model which are Ordinary Least Square (OLS) and robust regression. This research has heteroscedasticity problem. To solve this issue thi research use robust regression to deal with heteroscedasticity problem .

CHAPTER 4

RESULT AND DISCUSSION

4.1 General Overview of Research Subject and Object

This research taken subject of manufacturing companies listed on Indonesia Stock Exchange for period 2013 up to 2017 and has completed sampling criteria determined in chapter 3. Manufacturing sector used in this research because this sector has the biggest number of companies in Indonesia Stock Exchange so it is considered capable to cover all sample compared than other sector.

This Study used unbalanced panel data approach. The unbalanced panel data means the number of companies' observation is different each year. Total observation of this research is 464 year company. Those observation consist of 88 observation from 2013, 97 observation from 2014, 102 observation from 2015, 104 observation from 2016 and 73 observation from 2017.

4.2 Description of Research Result

Descriptive statistic used to describe all of the variables in this research without drawing any conclusion. The variables used in this research are earning management (Abs_DAt), board age (BAGE), board gender (BGEN), board nationality (BNAT), board tenure (BTEN), board expertise (BEXP), board size (BSIZE), firm size (FSIZE) and leverage (LEV). Table 4.1 present the information about mean, median, maximum value and minimum value of each variable. Mean of the variable represent average value of each variable while median is the center

value of each variable that previously sorted from the lowest to the highest value. Minimum is the smallest value of each variable, while maximum is the biggest value.

Table 4.1
Descriptive Statistic Result

	Mean	Median	Minimum	Maximum
Abs_DAt	0.171	0.143	0.000	1.138
BAGE	58.560	58.845	33.000	74.500
BGEN	0.108	0.000	0.000	0.750
BNAT	0.149	0.000	0.000	1.000
BTEN	7.662	6.367	0.000	33.500
BEXP	0.254	0.250	0.000	1.000
BSIZE	4.045	3.000	2.000	13.000
FSIZE	21.044	21.028	13.227	25.200
LEV	0.482	0.456	0.037	2.711

This research use absolute value of earning management. The absolute value of earning management does not considerate wheter the type of earning management is either income decreasing or income increasing. It only shows the level of earning management conducted in the companies. According to the table 4.1 earning management variable (Abs_DAt) has average value of 0.171. The lowest value of earning management is 0.000 and the maximum value is 1.138. The lowest earning managemnet value. The completed value can be look more details in attachment C in descriptive statistic section. In the descriptive statictic section of attachment C the earning minimum earning management value is 0.0002148 while the maximum value is 1.137866. The company which conduct lowest earning management is PT Goodyear Indonesia Tbk in 2013. It is a multinational company which produce cars tire and its related component. The company which conduct

higher level of earning management is Alaska Industrindo Tbk in 2016. It is the company which produce aluminium and other metals.

The average value of board age (BAGE) in Table 4.1 is 58.560 years which means the average age of board members in sample companies is between 58 and 59 years. The minimum value of board age is 33 years and the maximum value of board age is 74.5 years. The company which has averagely youngest board members is PT Sekawan Intipratama Tbk in 2013 while The company with averagely oldest board member is PT Lautan Luas Tbk. In 2014.

Board Gender (BGEN) in Table 4.1 has average value of 0.108. It means in average the sample companies has about 10.8% t of female commissioner on its membership. The minimum value of board gender is 0.000 which means there are companies which has fully men board member. The maximum value of board gender is 0.75 which means the biggest proportion of female board among sample is 75%. The company with higher proportion of woman board on its board comissioner is Tempo Scan Pacific Tbk.

Board nationality (BNAT) in Table 4.1 shown the average value of 0.149. It means in average companies in the observation has 14.9% of the board member who comes from foreign country. The minimum value of board nationality is 0.000 and it is indicate that there are companies which have no foreign board member. The maximum value of board nationality is 1. It means that all of the board commissioner member in the company are foreigners. The company which has 100% foreign member is Keramika Indonesia Asosiasi in 2014 – 2017.

Board Tenure (BTEN) in Table 4.1 has average value 7.662 years which means the average year's board member in each company has served the company for around 7 and 8 years period. The minimum value of board tenure is 0.000 and it means the shortest average period of the board member sit on board is less than one year. The maximum value of board tenure is 33.5. It means the longest average period of board member has served the company is about 26 or 27 years. The company which has board member longer period is Evershine Textile Industry Tbk in 2017.

Board expertise (BEXP) in table 4.1 has average value of 0.254. It means on average of the sample observed the 25.4% of the board member has expertise in accounting and finance proven by the certification held and or the working background in accounting and finance field. The minimum value of board expertise is 0.000 it means there are companies which has no member whose which has accounting or finance certification or background. The maximum value of the board expertise is 1 which means the all of the board member has accounting or finance expertise. The maximum value of board with accounting expertise is 100%.

Board size (BSIZE) in the table 4.1 has average value of 4.045. It means in average the company's board of commissioner has about 4 or 5 members. The minimum value of board size is 2. The minimum value shows the company with least board member. The maximum value of board member is 13. The maximum value shows the biggest amount of board member and it is owned by Indo Kordsa Tbk. in 2014

The firm size (FSIZE) in table 4.1 shown average value of 21.044. The firm size of 21.044 reflects real total asset in amount of Rp 5,071,610,851,000.00. The smallest firm has value 13.227. The smallest firm in the observation Eratex Djaja Tbk in 2013 and has real total asset in amount of Rp 555.331.000,00. The largest firm has firm size value of 25.200. It is PT Indofood Sukses Makmur Tbk in 2017 and has real total asset of Rp 87.939.488.000.000,00.

The leverage (LEV) in table 4.1 has average value of 0.482. It means that on average the total debt of the sample company is 47, 5% of its total asset. The minimum value of leverage is 0.037. It is shown that the company has 3.7% total debt compared by its total asset. The company with lowest proportion of total debt is Jayapari Steel Tbk in 2013. The maximum value of leverage is 2.711. It means the company has 277.1% of total debt compared by its total asset. The company which has biggest proportion of total debt is PT ITCSI Jasa Prima in 2015.

4.3 Model Analysis and Hypothesis Testing

4.3.1 Pearson Correlation Test Analysis

Pearson correlation is used to measure the strength and the direction of correlation between two independent variables. This test has an objection to examine whether there is any correlation in significant level 0.1, 0.05 or 0.001.

Table 4.2
Pearson Correlation Test Result

	Abs_DAt	BAGE	BGEN	BNAT	BTEN	BEXP	BSIZE	FSIZE	LEV
Abs_DAt	1.000								
BAGE	-0.078* (0.094)	1.000							
BGEN	-0.049 (0.289)	-0.205*** (0.000)	1.000						
BNAT	-0.056 (0.228)	-0.001 (0.975)	-0.164*** (0.000)	1.000					
BTEN	-0.121*** (0.009)	0.413*** (0.000)	0.060 (0.195)	-0.185*** (0.000)	1.000				
BEXP	0.079* (0.087)	-0.248*** (0.000)	0.199*** (0.000)	-0.036 (0.435)	-0.061 (0.186)	1.000			
BSIZE	-0.141*** (0.002)	0.228*** (0.000)	-0.165*** (0.000)	0.302*** (0.000)	-0.059 (0.207)	-0.096** (0.039)	1.000		
FSIZE	-0.163*** (0.000)	0.286*** (0.000)	-0.028 (0.548)	-0.013 (0.781)	0.055 (0.240)	0.029 (0.537)	0.448*** (0.000)	1.000	
LEV	0.062 (0.182)	0.051 (0.269)	0.143*** (0.002)	-0.081* (0.082)	0.088* (0.060)	0.050 (0.281)	-0.111** (0.017)	-0.003 (0.957)	1.000

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4.2 shown the Pearson correlation test result of this research variables. The pearson correlation test is analyze the direct relationship of individual independent variables to dependent variable. From the table, one proxy of board relation oriented diversity namely board age has negative significant correlation with earning management at 0.1 significant level. It implies that the older board member are the tendency of earning management in company is low and so otherwise. The board gender and board nationality do not correlate with the earning management. Afterwards, in board task oriented diversity proxy of board tenure has negative significant correlation at 0.01 significant level with earning management while the board expertise has positive significant correlation with earning management with 0.1 significant level. These result imply that the longer period of the board member sits in the board of comissioner position the level of earning management low and so otherwise. In addition, the higher proportion of board accounting or finance expertise the level of earning management low and so otherwise. For the control variable, board size and firm size has negative correlation with earning management at 0.01 significant level while leverage has no correlation.

4.3.2 Normality Test

Normality test is used for assessing whether the data is normally distributed or not. The regression model is said as good if the residual value of regression is normally distributed (Latan, 2014). The normality test in this research conducted

by first predict the residual value of the regression and then examined the residual value using skewness – kurtosis test.

Table 4.3
Skewness – Kurtosis Test for Normality Result

Variable	Observation	Skewness	Kurtosis	Adj chi2	Prob > chi2
r	464	0.6360	0.8586	0.26	0.8799

Table 4.3 shown the result of skewness-kurtosis test result for normality. From the table the value of Prob > χ^2 is 0.8799 and it is above 0.05 significant level. The additional examination of the normality test is conducted using histogram and normality p-plot graph. Both of these two graph is provide in attachment C. The conclusion which can be drawn from this examination is the residual value of regression model is normally distributed.

4.3.3 Heteroscedasticity Test Analysis

Heteroscedasticity is used to test whether the regression model has any variance inequality from observation residual. Breusch-pagan test for heteroscedasticity is provided in table 4.4

Table 4.4
Breusch-Pagan (Cook-Weisberg) Test for Heteroscedasticity Result

Ho : Constant Variance	
Variables : fitted value of Abs_DAt	
Chi2	= 56.70
Prob > chi2	= 0.0000

Table 4.4 shown the test result of heteroscedasticity. From this table the prob > chi2 is 0.000 and it is below 0.05 significant level. To eliminate the heteroscedasticity problem, this research use robust regression.

4.3.4 Multicollinearity Test Analysis

Multicollinearity test has objection to assess whether any inter-correlation between independent variables in the regression model. This test conducted by regressing the model at first and then estimate VIF (Variance Inflation Factor) value.

Table 4.5
Multicollinearity Test Result

Variable	VIF	1/VIF
Bsize	1.49	0.672942
BAGE	1.51	0.660542
Fsize	1.38	0.726543
BTEN	1.30	0.769964
BNAT	1.18	0.847232
BEXP	1.11	0.898106
BGEN	1.14	0.873922
LEV	1.04	0.958039
Mean VIF	1.27	

Table 4.5 shown the multicollinearity test result. From the table the average value of VIF is 1.27 and it is below the value 10 cut-off. All of the variables used in the research has VIF value less than 10 and Tolerance (1/VIF) more than 0.1. The conclusion that can be drawn from this examination is the regression model is free from multicollinearity problem.

4.3.5 Autocorrelation Test Analysis

Autocorrelation test is use to detect the problem which arise if the error residual from two or more observation is intercorrelated. The Durbin-Watson test result for autocorrelation is presented in the table below.

Table 4.6
Durbin-Watson Test Result for Autocorrelation

Durbin-Watson d-statistic (9, 464)	2.055236
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Table 4.6 shown the durbin value of 2.055236. From the Durbin Watson table for this model it is found that value of durbin lower (dl) is 1.81163 and the durbin upper (du) is 1.88238. The calculation of 4-du is 2.11762 and 4-dl is 2.18837. The model meet $du < d < d-du$ criteria so it there is no autocorrelation problem.

4.3.6 Multiple Regression Test Analysis

In accordance with the regression model, this research examine the relationship of board relation oriented diversity (board age, board gender, board nationality), board task oriented diversity (board tenure and board expertise) and control variables (board size, firm size, leverage) towards earning management. Regression model used in this study is:

$$DA_t = 0.388 + 0.001 BAGE - 0.076 BGEN - 0.040 BNAT - 0.036 BTEN \\ + 0.054 BEXP - 0.011 FSIZE - 0.034 LEV - 0.006 BSIZE + \varepsilon$$

Table 4.7
Multiple Regression Test Result

	OLS Regression	Robust Regression
BAGE	0.001 (0.65)	0.001 (0.72)
BGEN	-0.076* (-1.79)	-0.076** (-2.05)
BNAT	-0.040 (-1.39)	-0.040 (-1.56)
BTEN	-0.036*** (-2.70)	-0.036*** (-2.83)
BEXP	0.054* (1.81)	0.054* (1.68)
BSIZE	-0.006 (-1.33)	-0.006 (-1.52)
FSIZE	-0.011*** (-2.61)	-0.011** (-2.08)
LEV	0.034 (1.42)	0.034 (1.36)
_cons	0.388*** (4.05)	0.388*** (3.98)
r ²	0.066	0.066
N	464	463

t statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4.6 shown the regression result of OLS (Ordinary Least Square) regression and the robust regression. The variable of board age (BAGE) both in OLS regression and robust regression shown that there is no relationship with the earning management. The p-value of the board age in OLS regression is 0.509 and in robust regression is 0.459. Both of them are above the highest significant level 0.1. The not significant result of board age provide evidence that either young or old, the board members have no effect on earning management.

The variable of board gender (BGEN) in OLS regression and in robust regression shown different result. Board gender has negative relationship with

earning management at 0.1 significant level in OLS regression and at 0.05 significant level on robust regression. The p-value of board gender in OLS regression is 0.072 and in robust regression is 0.039. The negative significant result provide evidence that the higher proportion of female members on board, earning management level is low.

The variable of board nationality (BNAT) both in OLS regression and robust regression shown that there is no relationship with the earning management. The p-value of the board nationality in both in OLS regression and robust regression is 0.172 and 0.123 sequentially. This value is above the highest significant level 0.1. Not significant result of board nationality provide evidence that the proportion of the foreign board member has no effect on earning management

The variable of board tenure (BTEN) in OLS regression and robust regression shown negative significant relationship towards earning management at 0.01 significant level. The p-value of board tenure in OLS regression is 0.007 while the p-value of board tenure in robust regression is 0.005. The negative significant result of board tenure provide evidence that the older board members are, the level of earning management level is low.

The variable of board expertise (BEXP) both in OLS regression and robust regression shown that there is positive relationship with the earning management at 0.1 significant level. The p-value of the board age in OLS regression is 0.063 and in robust regression is 0.085. The positive significant result of board expertise provide evidence that the higher proportion board members which has professional qualification in accounting and finance, the earning management level is low.

The variable of board size (BSIZE) both in OLS regression and robust regression shown there is no effect of board size and earning management. The p-value of the board size in OLS regression is 0.192 and in robust regression is 0.137. This research provide evidence that either less or more amount of board member in the company, the earning management is not affected.

The variable of firm size (FSIZE) both in OLS regression and robust regression shown the negative significant effect on earning management. Firm size is significant at 0.01 significant level in OLS regression with p-value of 0.009. In the Robust regression the firm size is significantat 0.05 significant level with p-value of 0.037. This result of this research provide evidence that that the higher asset owned by the company, the level of earning management is low.

The last control variable is the leverage (LEV). The leverage variable both in OLS regression and robust regression shown no significant result. In OLS regression the p-value of leverage variable is 0.150 while in the robust regression is 0.168. This research provide evidence that either low or high proportion company debt compared to its total asset, the earning management is not affected.

4.4 Discussion

4.4.1 The Effect of Board Relation Oriented Diversity on Earning Management

The robust regression shows that one of the proxy in board relation oriented diversity, namely board gender has significant effect on earning management. The other two element which are board age and board nationality have no significant effect on earning management. This finding accept hypothesis

1 which stated that board relation oriented diversity has effect on earning management. To further analysis of each proxy, the detailed explanation is presented below.

4.4.1.1 The Effect of Board Age on Earning Management

The average age of the board in manufacture firm in Indonesia is shown the generalization of the age of the board member. The robust regression result proves that the board age has no significant influence on earning management. This result impl that either older or younger board does not affect earning management in the manufacture companies. This research is failed to support hypothesis 1a which stated that the board age has negative effect on earning management. This research is failed to provide empirical evidence for upper echelon theory which stated that the upper echelon (board) age could has influence on company outcome in term of presenting profit or earning. This research also failed to confirm the agency theory that establishing the monitoring cost throught board as the monitoring agent can reduce assymetry information that may decrease the opportunistic behavior of manager or earning management activity. The age of the board in this research can not be consideration of the board to reduce earning management activity.

The failure of provide empirical evidence of relation between board age and earning management confirm previous research by Aritonang (2018). The research shown there is no influence of board age to earning quality of non financial companies in Indonesia. The other research of the board age and earning management is conducted by Zwet (2015) in United Stated companies and also proven no significant effect. The insignificant result of the board age on earning

management is happened because the presence of perspective gap among older and younger board member. Houle (1990) on the research found that the younger board are more innovative, has energy and drive to succeed for company future while older board need experience and network that make more wisdom to the company activity. The perspective gap result on different in manner and working that leads to less efficient monitoring toward management activity (Zwet, 2015).

4.4.1.2 The Effect of Board Gender on Earning Manage

The proportion of board gender in this research shows the proportion of female member of the board membership. The robust regression result proves that the board gender has negative significant effect on earning management. It means the bigger proportion of the female board of board membership, the lower level of earning management. This result is support hypothesis 1b which state that the board gender has negative effect on earning management. This resource provide empirical evidence of resource dependence theory which stated that the board brings several benefit to the company in term of providing advice and conseil, channel to access information between company and external environment, preferential access of resource and legitimacy.

This research confirm previous research by Gull et al. (2018) that prove that board gender has negative effect on earning management. Another research by Gavious et al. (2012) that also provide evidence if woman board has negative significant effect on earning management. This research provide evidence about the board gender has negative effect on earning management. As the proportion of

woman on board membership the earning management is reduced. It happens because according to Barber and Odean (2001) women are more risk averse tendency compared than men. Risk averse nature of the woman in the business context is related to the ethical value which held by the woman. Betz et al. (1989) found that women are more ethical in the workplace and less likely to engage in unethical behavior to gain financial reward such as earnings management activity. In addition Krishnan and Parsons (2007) reveal that women are less tolerant of opportunistic behavior.

4.4.1.3 The Effect of Board Nationality on Earnings Management

The proportion of board nationality in this research shows the proportion of foreign board of the board membership. The amount of the foreign board is minority proven by the board nationality mean in manufacturing companies in Indonesia. The robust regression result proves that the board nationality has no significant influence on earnings management. This research rejects hypothesis 1c which stated that the board nationality has a negative effect on earnings management. From this regression result it implies that the presence of foreign board at any amount does not influence earnings management practice in manufacturing companies in Indonesia. This research failed to support resource dependence theory which stated that the board brings several benefits to the company in terms of providing advice and counsel, channel to access information between company and external environment, preferential access of resources and legitimacy and in terms of board nationality will bring independency. This result is similar to the previous research

conducted by Enofe et al. (2017) which also provide evidence that foreign board member has no effect on earning management. The failure of providing evidence of effect board nationality to earning management in manufacturing companies in Indonesia can be interpreted from Indonesia teamwork culture.

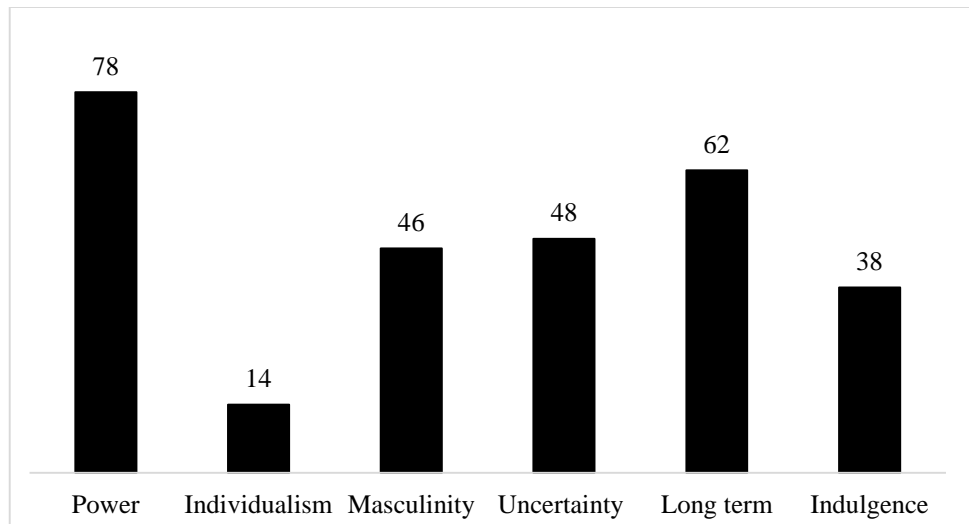


Figure 4.1

Hofstede Score for Cultural Dimension of Indonesia

Source : Hofstede (2019)

Based on figure 4.1, Indonesia according to Steve Hofstede Value of six culture dimension categorized as collectivist country proven by fourteen value of individualistic. The collectivist country have high preference for a strong define social framework in which individual are expected to conform to the ideas of society and the in-group to which they belong (Hofstede, 2019). In the condition of presence foreign board member in Indonesia manufacture companies those directors are not come from similar pool group. It what said by Ruigrok et al. (2007) that the foreign board is faced with strong domestic network without previous or current directorship experience and will drive to minority trap. The

minority trap can cause the foreign board member can not be more open and frank in performing monitoring task. According to Oxelheim and Randøy (2003) in this condition the foreign board prefer giving priority to politeness and courtesy among the board members. Another possibility the foreign board member can not confirm argument by Choi and Wong (2007) that foreign board are more skeptical to limits executive power. Because of this reason, the foreign board member can not play roles on monitoring function of the board on earning management activity.

4.4.2 The Effect of Board Task Oriented Diversity on Earning Management

The robust regression shows in board task oriented diversity both proxies (board tenure and board expertise) provide significant significant effect on earning management. The difference is the board tenure has negative significant effect while board expertise has positive significant effect. This research provide supportive evidence for hypothesis 2 which stated that board task oriented diversity has effect on earning management.

4.4.2.1 The Effect of Board Tenure on Earning Management

Board tenure in this research shown the average of years the members are being in the board membership. The robust regression result proves that the board tenure has negative significant effect on earning management. It means that the longer period of the people sit on the board the more earning management activity will be reduced. This research result supports the hypothesis 2a which state that board tenure has negative effect on earning management. This research also provide empirical evidence to resource dependence theory that the board brings benefit

term of providing advice and counsel, channel to access information between company and external environment, preferential access of resource and legitimacy in the form of distinctive characteristic on experience of each board according to (Hilman et al., 2000).

The previous research by Xiong (2016) provide evidence that the board tenure has negative effect on earning management. The long tenured board are mentioned has lower level of earning management. Another research by Peasnell et al. (2005) provide evidence that average tenure of non-executive director on the board can negative significantly affect earning management. The explanation of this condition is the tenure which shown experience of the board can make the company board develop monitoring competencies while providing some firm specific expertise such as knowledge of the company operation and it's management (Bedard et al., 2004). Thus as the longer tenure of the board member, the ability to monitor earning management increase.

4.4.2.2 The Effect of Board Expertise on Earning Management

The proportion of board expertise in this research shows the percentage of the board member which has accounting and finance expertise. The robust regression result proves that the board expertise has positive significant effect on earning management. From this regression result it imply that the higher number of accounting and finance expert on board of manufacture companies in Indonesia increase earning management level. This result is contradictive to hypothesis 2b which state that the board expertise has negative effect on earning management.

The research can not confirm the resource dependence theory that the board brings benefit term of providing advice and conseil, channel to access information between company and external environment, preferential access of resource and legitimacy.

This research is inline with the previous research conducted by Abubakar et al. (2002) that examined the board expertise on earning management and found significant positive impact. Another research by Ahmed (2013) also found that the board financial expertise has positive significant effect on earning management in the Malaysia companies. Possible explanation for the positive result in earning management is because the view of earning management. According to Sun et al. (2010) not all of the board see earning management as unethical practice. Chong (2006) argues that earning management is a logical result of the flexibility in financial reporting option and it is not considered as bad if the earning management used to create stable financial performance by acceptable and voluntary business decision.

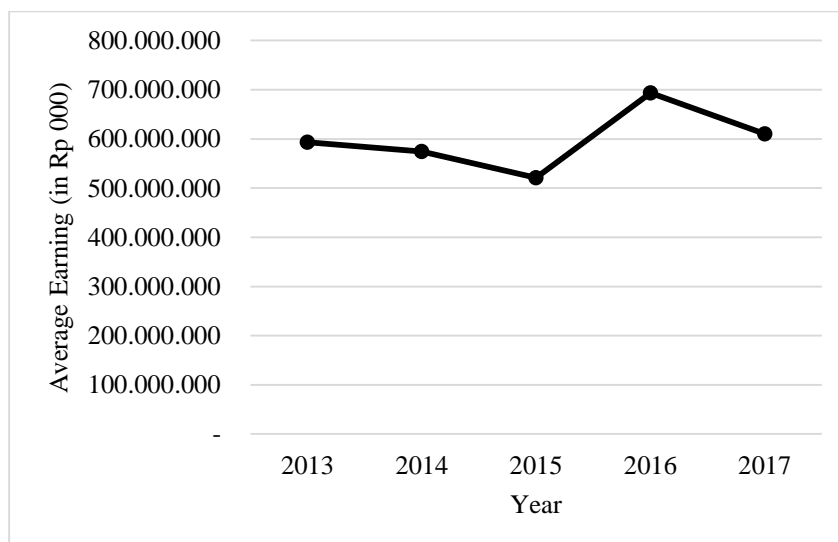


Figure 4.2

Average Earning of the sample companies

Figure 4.2 provide the trend of average earning within the sample companies of manufacturing industry listed in Indonesia Stock Exchange for the period of 2013 up to 2017. The sample data which previously unbalanced is transformed become balanced data to make the average earning in each year is represent each sample companies. From the figure 4.2 it is found that not really fluctuation of the earning in 2013 and following years. The earning level in 2013 is Rp 593,506,780,000.00 then it slightly increase in 2016 to be Rp 693,815,290,000.00 and finally drop to be Rp 610,183,883,000.00. This explanation shown that there is tendency to make financial performance table in manufacturing firm in Indonesia and it support Chong (2006) arguments in previous paragraph.

The board with accounting and finance expertise must be aware of the consequence in earning management since earning management practice needs knowledge and skill in accounting (García-Sánchez et al., 2017). The board with accounting and finance may belief that the earning management practice is not bad for the company. So the higher proportion of board member expert in accounting or finance tend to increase earning management activity in order to make the earning stable over years. In the adoption of earning management strategy, the management has authority to choose certain strategy in managing the earning and this strategy is approved by the board because according to Chong (2006) the management strategy should be thoroughly reviewed and deliberated among the board member before adoption.

4.4.3 The Effect of Control Variables on Earning Management

This research use three control variables namely board size, firm size and leverage. Board size is the representation of the number of the people sits on board. The firm size shown the size of the companies based in its total asset owned. Leverage depicts the proportion of the comapnies total debt per its total asset.

The robust regression result of this research shown negative significant effect on board size and earning management. This result depicts that the higher number of board member earning management practice in Indonesia manufacture companies decrease. This research result similar with the previous research by Jouber and Fakhfakh (2011), Sharifah (2012) and Jamaludin et al. (2015) which also found that there is no relationship between board size and earning management.

The robust regression result of this research shown that there is negative significant effect of firm size and earning management. Manufacture companies in indonesia which has larger asset, has lower earning management level. This research result similar with the research by Mohammad et al. (2016), Agustia (2013), Jao and Pagalung (2011), and Davidson et al. (2007). The larger firm tend to have larger attention from various stakeholder because many stakeholder may have interest in it. Because of this reason, the larger company is more cautious in presenting earning to the external parties. As result the larger firm present the earning more accurate which means has lower level of earning management.

The robust regression result of this research shown that there is no effect of leverage and earning management. In Manufacture companies in Indonesia, the higher propotion of total debt to its total asset does not affect earning management

level. This research inline with the previous research by Lin et al. (2006), Sharifah (2012) and Wang et al. (2015) which also found that the leverage does not affect earning management.

CHAPTER 5

CONCLUSION AND SUGGESTION

5.1 Conclusion

This research examine the effect of board relation oriented diversity and task related diversity on earning management of the manufacture companies listed in Indonesia Stock Exchange (IDX) for the period 2013 – 2017. The conclusion which can be drawn from this research are :

1. The board relation oriented diversity has effect on earning management but the effect is not really significant because only one out of three proxy is proven significant. It is the board gender which has negative significant effect on earning management. This findings is inline with the previous research by Gull et al. (2018) and Gavious et al. (2012) which also found that the woman on board relate negatively significant to earning management. As the relation oriented diversity on board gender increase in Indonesia Manufacture companies, the level of earning management is reduced.
2. The board task oriented diversity has effect on earning management and the effect is significant because both of the proxy have significant effect. In this research, the board tenure has negative significant effect on earning management. This result inline with the previous research by Xiong (2016) and Peasnell et al. (2005) which found that the board is negatively significant affect earning management. The longer board member in the board position make earning management level reduced because the board had developed

competencies to monitor manager action. The board expertise has positive significant effect on earning management. This research is inline with research by Enofe et al. (2017) which found that the board finance expertise has positive effect on earning management. The higher proportion of the board with accounting and financial expertise make the earning management level higher it may caused by the expert board which already known for the consequences of earning managemnet and also the bad or good strategy of earning management. The good understanding of the board make the board approved on the action or strategy of management to manage the earning to meet stability in company performance.

5.2 Limitation

The research has limitations which can be used as the basis to conduct following research. On this research that following research by (Harjoto et al., 2018) this reserch can not apply Blau index as heterogenity measurement because limited diversity data of ethnics and expertise from manufacture company's annual report. The ethnicity data is hard to identify since in Indonesia there are over than 300 ethnical group (Miaschi, 2019) and for expertise the company annual report provide a few information.

5.3 Suggestion

Based on the limiation of the research, the following research can examine the of relation oriented diversity and task oriented diversity with individual

proxy. To develop this research, the following researcher also can add board monitoring as intervening variable to examine the effect of board relation oriented diversity and task oriented diversity on earning management.

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ATTACHMENT

Attachment A : Table of Previous Research

No	Author (Year)	Variables		Population and Sample	Data Analysis Technique	Result and Explanation
		X	Y			
1	Gull et al. (2018)	woman directors and its attributes	earning management	French firm listed in Euronext during 2001 - 2010	GMM regression estimation	<ol style="list-style-type: none"> 1. presence of woman director deter manager to manage earning 2. percentage and number of woman directors has significant positive relationship with earning management 3. Woman experience (tenure and multiple directorship) has positive effect on earning management
2	Harjoto et al. (2018)	<ol style="list-style-type: none"> 1. Board-relation oriented diversity (age, race, gender) 2. Board-task oriented diversity (tenure, expertise) 	Corporate investment oversight	Firms with director data available in Risk Metrics for period 1998 - 2014	Fixed Effect Regression Analysis	<ol style="list-style-type: none"> 1. There's no association of board relation-oriented diversity and board performance in investment oversight 2. Board task-related diversity is negatively associated with deviation of expected level investment which means make the board performing better on investment oversight

3	Enofe et al. (2017)	<ol style="list-style-type: none"> 1. Foreign board member 2. female board 	Earning management	Firms in Nigeria Stock Exchange during 2014, exclude financial firms	MLS Regression	foreign board members and female gender in the board were negatively related to earning management
4	Du et al. (2017)	Foreign directors	Earning management	Firms with A-shares exclude financial industries during 2004 - 2012	Multivariate test	Earning management is negatively associated with the presence and ratio of foreign directors on corporate boards
5	Gavious et al. (2012)	<ol style="list-style-type: none"> 1. No of female director is board of director 2. No of female director in audit committee 3. Female CEO/CFO 	Earning Management	Israeli high-technology firms listed in USA between 2002 - 2009	Univariate analysis and Multivariate analysis	<ol style="list-style-type: none"> 1. Presence of woman board of director as well as woman audit committee is related to lower extent of earning management 2. either woman CEO and CFO can lower earning management activity
6	Arun et al. (2015)	<ol style="list-style-type: none"> 1. number of female directors 2. number of independent female director 	Earning Management	UK FTSE 350 index during 2005 – 2011, exclude mining and financial industries	Ordinary Least Square (OLS) Regression	firm with a higher number of female director and independent directors are adopting restrained earning management in UK
7	Wicaksana et al. (2017)	Board Diversity (age, gender, nationality, and educational background)	Earning Management	Companies Listed in Indonesia Stock Exchange for 6 years	Multiple Linear Regression Analysis	The board diversity has negative effect on earning management

8	Zwet (2015)	<ol style="list-style-type: none"> age diversity gender diversity Ethnic diversity 	Earning Management	All US firms in the period of 2008 – 2013, exclude utility firm and financial services	OLS and Robust Regression	<ol style="list-style-type: none"> The board age diversity has significant positive relationship with earning management board gender diversity has negative relationship with earning management board ethnic diversity has significant positive relationship with earning management
9	Xie et al. (2003)	Board and audit committee members with corporate and financial background	Earning management	110 firms from S&P 500 index for the year 1992, 1994, and 1996	Ordinary Least Square Regression	Board and audit committee members with corporate or financial backgrounds are associated with firms having smaller discretionary accrual (earning management)
10	(Xiong, 2016)	<ol style="list-style-type: none"> gender tenure age 	Accrual and real earning management	Companies listed in Shenzhen and Shanghai Stock Exchange during 2005 - 2014	Ordinary Least Square Regression	Companies with female, long-tenured and older board chairman have lower discretionary accrual and real earning management
11	(Ahmed, 2013)	Financial expert on board	Earning management	71 companies listed in bursa Malaya from 2001 to 2005	Multiple linear regression	The board financial expertise is positively related to earning management
12	(García-Sánchez et al., 2017)	<ol style="list-style-type: none"> female board finance expert board 	Earning Quality	159 banks from nine countries	Generalized Method Moment (GMM) Regression	Both female and financial expert have positive effect on earning quality in banks.

Attachment B: List of Manufacture Companies Used as Research Sample

NO	TICKER	COMPANY NAME
1	ADMG	Polychern Indonesia Tbk.
2	AGII	PT Aneka Gas Industri Tbk.
3	AISA	Tiga Pilar Sejahtera Food Tbk.
4	AKKU	PT Anugerah Kagum Karya Utama Tbk. (PT Alam Karya Unggul Tbk.)
5	ALKA	Alakasa Industrindo Tbk
6	ALTO	Tri banyan Tirta Tbk.
7	AMIN	PT Ateliers Mecaniques D'Indonesie Tbk.
8	APLI	Asiaplast Industries Tbk.
9	AUTO	Astra Otoparts Tbk.
10	BAJA	SaranaCentral Bajatama Tbk.
11	BNBR	PT Bakrie & Brothers
12	BRAM	Indo Kordsa Tbk.
13	BRNA	Berlina Tbk.
14	BTON	Betonjaya Manunggal Tbk.
15	CINT	PT Chitose International Tbk.
16	CITA	PT Cita Mineral Investindo
17	CLPI	PT Colorpark Indonesia
18	CTBN	Citra Turbindo Tbk.
19	DLTA	Delta Djakarta Tbk.
20	DPNS	Duta Pertiwi Nusantara Tbk.
21	DPUM	PT Dua Putra Utama Makmur
22	DSNG	PT Dharmasatya Nusantara Tbk.
23	DVLA	Darya-Varia Laboratoria Tbk.
24	ERTX	Eratex Djaja Tbk.
25	ESTI	Ever Shine Textile Industry Tbk.
26	FISH	PT FKS Multiagro Tbk.
27	FPNI	PT Lotte Chemical Titan Tbk.
28	GDST	Gunawan Dianjaya Steel Tbk.
29	GDYR	Goodyear Indonesia Tbk.
30	GEMA	PT Gema Grahasarana
31	GREN	PT Evergreen Invesco Tbk.
32	HMSP	PT Handjaya Mandala Sampoerna Tbk.
33	ICBP	Indofood CBP Sukses Makmur Tbk.
34	IGAR	Champion Pacific Indonesia Tbk.
35	IKBI	Sumi Indo Kabel Tbk.
36	IMAS	Indomobil Sukses International Tbk.
37	IMPC	PT Impack Pratama Industri Tbk.
38	INAF	Indofarma (Persero) Tbk.

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39	INCI	Intanwijaya International Tbk.
40	INDF	Indofood Sukses Makmur Tbk.
41	INDR	Indo-Rama Synthetics Tbk.
42	INDS	Indospring Tbk.
43	INTD	PT Inter Delta Tbk.
44	INTP	Indocement Tunggul Prakarsa Tbk.
45	IPOL	Indopoly Swakarsa Industry Tbk.
46	JAWA	PT J.A. Wattie Tbk.
47	JECC	Jembo Cable Company Tbk.
48	JPFA	JAPFA Comfeed Indonesia Tbk.
49	JPRS	PT Jaya Pari Steel Tbk.
50	KAEF	Kimia Farma (Persero) Tbk.
51	KARW	PT ITCSI Jasa Prima
52	KBLI	KMI Wire and Cable Tbk.
53	KBRI	Kertas Basuki Rachmat Indonesia Tbk.
54	KDSI	Kedawung Setia Industrial Tbk.
55	KIAS	Keramika Indonesia Asosiasi Tbk.
56	KINO	PT Kino Indonesia Tbk.
57	KKGI	PT Resource Alam Indonesia Tbk.
58	KLBF	Kalbe Farma Tbk.
59	KOBX	PT Kobexindo Tractors Tbk.
60	KRAH	PT Grand Kartech Tbk.
61	KRAS	Krakatau Steel (Persero) Tbk.
62	LAPD	Krakatau Steel (Persero) Tbk.
63	LION	Lion Metal Works Tbk.
64	LMPI	Langgeng Makmur Industri Tbk.
65	LMSH	PT Lionmesh Prima Tbk.
66	LPIN	Multi Prima Sejahtera Tbk.
67	LTLS	PT Lautan Luas Tbk.
68	MARI	PT Mahaka Radio Integra
69	MASA	Multisrada Arah Sarana Tbk.
70	MERK	Merck Tbk
71	MLBI	Multi Bintang Indonesia Tbk.
72	MLIA	Mulia Industrindo Tbk.
73	MRAT	Mustika Ratu Tbk.
74	MYOR	Mayora Indah Tbk.
75	MYTX	Asia Pacific Investama Tbk. (Apac Citra Centertex Tbk.)
76	NIKL	Pelat Timah Nusantara Tbk.
77	NIPS	Nipress Tbk.
78	PALM	PT Providen Agro
79	PBRX	Pan Brothers Tbk.

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80	PICO	Pelangi Indah Canindo Tbk.
81	PLAS	PT Polaris Investama Tbk.
82	PSDN	PrasidHa Aneka Niaga Tbk.
83	PTSN	Sat Nusa Persada Tbk.
84	RICY	Ricky Putra Globalindo Tbk.
85	RMBA	Bentoel International Investama Tbk.
86	SDPC	PT Millenium Pharmacon Tbk.
87	SIAP	Sekawan Intipratama Tbk.
88	SIMA	PT Siwani Makmur Tbk.
89	SIPD	Sierad Produce Tbk.
90	SKBM	Sekar Bumi Tbk.
91	SKLT	Sekar Laut Tbk.
92	SMBR	Semen Baturaja (Persero) Tbk.
93	SMGR	Semen Indonesia (Persero) Tbk.
94	SMSM	Selamat Sempurna Tbk.
95	SPMA	Suparma Tbk.
96	SRSN	Indo Acidatama Tbk.
97	STAR	Star Petrochem Tbk.
98	SULI	PT SLJ Global Tbk.
99	TCID	Mandom Indonesia Tbk.
100	TFCO	Tifico Fiber Indonesia Tbk.
101	TPIA	PT Chandra Asri Petrochemical Tbk.
102	TRIS	Trisula International Tbk.
103	TSPC	Tempo Scan Pacific Tbk.
104	UNIT	Nusantara Inti Corpora Tbk.
105	UNVR	Unilever Indonesia Tbk.
106	VOKS	Voksel Electric Tbk.
107	WAPO	PT Wahana pronatural
108	WIIM	Wismilak Inti Makmur Tbk.
109	WSBP	Waskita Beton Precast Tbk.
110	WTON	Wijaya Karya Beton Tbk.
111	YPAS	Yanaprima Hastapersada Tbk.

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Attachment C : Dataset Used in The Research

No	TICKER	YEAR	DAt	Abs_DAt	BAGE	BGEN	BNAT	BTEN	BEXP	BSIZE	FSIZE	LEV
1	ADMG	2013	-0.0610458	0.0610458	63.000	0.000	0.000	5.200	0.200	5	22.64530	0.43620
2	AISA	2013	-0.0285749	0.0285749	53.000	0.000	0.000	8.200	0.167	6	22.33786	0.53057
3	ALKA	2013	-0.3990226	0.3990226	61.500	0.000	0.000	10.000	0.500	4	19.30409	0.75339
4	ALTO	2013	-0.2549366	0.2549366	46.333	0.333	0.000	5.000	0.333	3	21.13041	0.63905
5	APLI	2013	-0.0778919	0.0778919	54.000	0.000	0.000	8.000	0.000	3	19.53120	0.28285
6	AUTO	2013	0.0584442	0.0584442	56.400	0.000	0.300	4.000	0.400	10	23.24778	0.24501
7	BAJA	2013	-0.1064836	0.1064836	63.333	0.000	0.000	14.000	0.333	3	20.55239	0.79328
8	BRAM	2013	-0.0315597	0.0315597	53.714	0.000	0.571	7.000	0.000	7	21.79267	0.32191
9	BRNA	2013	-0.3749327	0.3749327	61.333	0.000	0.000	12.667	0.333	3	20.84117	0.72814
10	BTON	2013	0.4736794	0.4736794	51.000	0.000	0.000	3.000	0.500	2	18.98677	0.21188
11	CITA	2013	-0.2403076	0.2403076	57.500	0.500	0.000	8.000	0.000	2	22.05130	0.44396
12	CLPI	2013	0.0193873	0.0193873	57.000	0.333	0.000	16.333	0.000	3	20.20905	0.56503
13	CTBN	2013	0.0871678	0.0871678	60.250	0.000	0.333	4.167	0.167	6	15.02197	0.44957
14	DLTA	2013	0.0224497	0.0224497	58.333	0.000	0.600	5.200	0.000	5	20.58060	0.21969
15	DPNS	2013	0.6024474	0.6024474	53.667	0.000	0.000	1.667	0.333	3	19.36214	0.12850
16	DSNG	2013	-0.1923632	0.1923632	64.333	0.000	0.000	9.500	0.167	6	22.50178	0.71651
17	DVLA	2013	0.1865694	0.1865694	58.800	0.143	0.571	9.857	0.000	7	20.89726	0.23138
18	ERTX	2013	-0.0916178	0.0916178	46.667	0.250	0.250	1.000	0.500	4	13.22732	0.77092
19	ESTI	2013	0.1653804	0.1653804	57.000	0.333	0.000	26.667	0.667	3	20.71279	0.53892
20	FISH	2013	0.2168577	0.2168577	65.000	0.000	0.000	7.333	0.000	3	21.88492	0.82540

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21	FPNI	2013	-0.0237740	0.0237740	60.000	0.000	0.500	2.000	0.000	2	15.07758	0.65743
22	GDST	2013	0.1530336	0.1530336	56.000	0.000	0.500	6.500	1.000	2	20.89848	0.25773
23	GDYR	2013	-0.0002148	0.0002148	59.000	0.000	0.667	4.000	0.333	3	21.12341	0.45342
24	GEMA	2013	0.1782409	0.1782409	62.000	0.000	0.000	6.667	0.000	3	19.74936	0.60101
25	GREN	2013	-0.2404182	0.2404182	58.000	0.000	0.000	2.000	0.000	2	20.23860	0.22441
26	HMSP	2013	0.1069222	0.1069222	62.000	0.167	0.667	4.000	0.000	6	24.03398	0.48348
27	IKBI	2013	0.4073943	0.4073943	49.400	0.000	0.600	1.800	0.200	5	20.68243	0.15140
28	IMAS	2013	0.3523074	0.3523074	64.429	0.000	0.143	13.714	0.286	7	23.82853	0.70155
29	INAF	2013	0.1527637	0.1527637	51.500	0.500	0.000	0.500	0.000	4	20.98140	0.54362
30	INCI	2013	0.0453822	0.0453822	62.333	0.000	0.000	13.000	0.000	3	18.72921	0.07382
31	INDR	2013	-0.0541123	0.0541123	58.000	0.200	0.400	18.000	0.000	5	22.91581	0.59598
32	INDS	2013	-0.1611365	0.1611365	60.667	0.000	0.000	16.000	0.000	3	21.51014	0.20198
33	INTD	2013	0.2489370	0.2489370	43.333	0.333	0.000	4.667	0.000	3	17.79357	0.55857
34	INTP	2013	0.0326628	0.0326628	57.286	0.000	0.571	6.571	0.143	7	24.00445	0.13641
35	IPOL	2013	-0.1004235	0.1004235	57.667	0.333	0.000	9.333	0.333	3	21.94190	0.45803
36	JAWA	2013	-0.2704789	0.2704789	57.333	0.667	0.000	3.333	0.667	3	21.70123	0.52074
37	JECC	2013	0.4423021	0.4423021	64.333	0.333	0.000	22.333	0.333	3	20.93823	0.88090
38	JPFA	2013	-0.0543561	0.0543561	66.000	0.333	0.000	1.333	0.333	3	23.42581	0.64839
39	JPRS	2013	0.5153654	0.5153654	62.500	0.000	0.000	12.500	0.500	2	19.74654	0.03723
40	KAEF	2013	0.0387623	0.0387623	58.400	0.200	0.000	0.400	0.200	5	21.62827	0.34288
41	KARW	2013	-0.0663449	0.0663449	52.667	0.000	0.667	0.333	0.000	3	20.32218	1.12519
42	KBLI	2013	0.1474565	0.1474565	69.167	0.000	0.000	8.167	0.000	6	21.01371	0.33685
43	KIAS	2013	-0.1734861	0.1734861	58.000	0.000	1.000	2.000	0.000	6	21.54344	0.09855
44	KKGI	2013	0.0960853	0.0960853	55.000	0.000	0.200	3.600	0.600	5	20.98031	0.30858

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45	KLBF	2013	0.1484108	0.1484108	58.000	0.000	0.000	6.000	0.167	6	23.14940	0.24879
46	KOBX	2013	0.2467204	0.2467204	54.333	0.000	0.000	7.333	0.000	3	21.10871	0.67420
47	KRAH	2013	0.5226741	0.5226741	58.000	0.000	0.000	7.667	0.000	3	19.61227	0.52939
48	LAPD	2013	-0.2607550	0.2607550	46.000	0.000	0.000	2.000	0.500	2	20.74056	0.30428
49	LION	2013	0.2839941	0.2839941	60.000	0.000	0.667	15.333	0.333	3	20.02725	0.16604
50	LMPI	2013	0.1070883	0.1070883	57.000	0.000	0.000	10.500	0.000	2	20.52748	0.51663
51	LMSH	2013	0.1926785	0.1926785	62.333	0.000	0.333	7.000	0.000	3	18.76921	0.22040
52	LPIN	2013	0.3659771	0.3659771	65.000	0.000	0.000	8.333	0.000	3	19.09562	0.26977
53	LTLS	2013	0.1971025	0.1971025	73.500	0.250	0.000	18.500	0.250	4	22.23444	0.69325
54	MASA	2013	-0.0913502	0.0913502	51.600	0.000	0.200	6.200	0.200	5	22.76041	0.40391
55	MERK	2013	0.1718350	0.1718350	55.000	0.000	0.667	1.667	0.667	3	20.36222	0.26505
56	MLIA	2013	-0.3821556	0.3821556	61.800	0.200	0.000	0.600	0.600	5	22.69594	0.83447
57	MRAT	2013	0.2271323	0.2271323	62.000	0.000	0.000	8.333	0.000	3	19.90134	0.14057
58	MYOR	2013	0.0604134	0.0604134	65.000	0.000	0.000	7.800	0.400	5	22.99645	0.59899
59	MYTX	2013	-0.2801165	0.2801165	68.500	0.000	0.000	8.000	0.000	4	21.46304	1.04942
60	NIKL	2013	0.0673399	0.0673399	55.833	0.000	0.500	2.333	0.000	6	21.14326	0.66675
61	NIPS	2013	0.1431043	0.1431043	57.333	0.333	0.000	10.000	0.667	3	20.49813	0.70448
62	PALM	2013	-0.4194723	0.4194723	56.667	0.000	0.000	1.333	0.333	6	22.14074	0.62249
63	PBRX	2013	-0.0184001	0.0184001	49.000	0.000	0.000	0.667	1.000	3	21.77192	0.58055
64	PSDN	2013	0.0138209	0.0138209	62.167	0.000	0.000	13.333	0.333	6	20.34029	0.38753
65	PTSN	2013	0.1143644	0.1143644	55.333	0.000	0.000	6.000	0.000	3	20.68075	0.34562
66	RICY	2013	0.1623508	0.1623508	57.667	0.000	0.000	12.000	0.667	3	20.82750	0.65654
67	SDPC	2013	0.3420840	0.3420840	54.000	0.200	0.800	3.000	0.200	5	19.97181	0.75646
68	SIAP	2013	0.0699320	0.0699320	33.000	0.000	0.000	6.333	0.333	3	19.42351	0.63311

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69	SIMA	2013	0.3089828	0.3089828	50.750	0.000	0.000	2.000	0.500	4	17.99472	0.54034
70	SIPD	2013	0.0519130	0.0519130	63.000	0.333	0.000	8.333	0.000	3	21.87247	0.59276
71	SKBM	2013	-0.5700204	0.5700204	58.333	0.000	0.000	11.000	0.000	3	20.02541	0.59585
72	SKLT	2013	-0.2982289	0.2982289	55.000	0.333	0.000	18.000	0.667	3	19.52590	0.53757
73	SMBR	2013	0.0281645	0.0281645	59.400	0.200	0.000	3.000	0.200	5	21.72074	0.09016
74	SMGR	2013	-0.1973900	0.1973900	56.833	0.000	0.000	2.000	0.000	6	24.15055	0.29192
75	SMSM	2013	0.0112830	0.0112830	64.667	0.000	0.000	14.333	0.000	3	21.25454	0.40815
76	SRSN	2013	0.0911192	0.0911192	61.875	0.000	0.125	7.250	0.250	8	19.85763	0.25288
77	SULI	2013	0.1758443	0.1758443	65.000	0.333	0.000	4.667	0.333	3	20.66656	1.40882
78	TFCO	2013	-0.0167990	0.0167990	66.000	0.000	0.000	3.000	0.000	3	22.20685	0.19393
79	TPIA	2013	-0.1541587	0.1541587	60.714	0.143	0.571	1.714	0.571	7	22.20685	0.19393
80	TRIS	2013	0.1121149	0.1121149	52.333	0.000	0.000	1.333	0.000	3	19.92255	0.37127
81	TSPC	2013	0.1831538	0.1831538	61.400	0.400	0.000	10.200	0.200	5	22.41114	0.28569
82	UNIT	2013	-0.2558191	0.2558191	54.000	0.000	0.000	3.000	0.000	2	19.94482	0.47452
83	UNVR	2013	-0.2129375	0.2129375	55.667	0.000	0.200	5.000	0.400	5	23.26514	0.66508
84	VOKS	2013	0.0755187	0.0755187	58.400	0.200	0.200	5.000	0.400	5	21.39408	0.69259
85	WAPO	2013	-0.0850793	0.0850793	50.000	0.500	0.000	0.500	0.500	2	18.55664	0.86871
86	WIIM	2013	0.1920721	0.1920721	58.333	0.333	0.000	13.000	0.333	3	20.92948	0.36424
87	WTON	2013	0.0267325	0.0267325	54.000	0.400	0.000	0.800	0.200	5	21.79396	0.74977
88	YPAS	2013	0.0026545	0.0026545	60.667	0.000	0.000	11.333	0.000	3	20.23531	0.72175
89	ADMG	2014	-0.0284975	0.0284975	63.000	0.000	0.000	5.200	0.200	5	22.48076	0.37637
90	AISA	2014	-0.0450260	0.0450260	50.667	0.000	0.000	8.500	0.200	5	22.72121	0.51370
91	AKKU	2014	1.0490785	1.0490785	60.500	0.000	0.000	1.000	0.000	2	18.32274	0.95725
92	ALKA	2014	0.1451296	0.1451296	62.500	0.000	0.000	11.000	0.500	4	19.31798	0.74732

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93	ALTO	2014	0.1581619	0.1581619	47.333	0.333	0.000	6.000	0.333	3	20.93580	0.57056
94	APLI	2014	-0.0546005	0.0546005	53.667	0.000	0.000	11.333	0.333	3	19.42545	0.17777
95	AUTO	2014	0.1628102	0.1628102	57.000	0.000	0.200	4.000	0.400	10	23.38963	0.29504
96	BAJA	2014	0.1522878	0.1522878	64.333	0.000	0.000	15.000	0.333	3	20.69757	0.80677
97	BRAM	2014	-0.1834341	0.1834341	53.385	0.000	0.692	4.308	0.154	13	22.06756	0.42368
98	BRNA	2014	-0.2743512	0.2743512	62.333	0.000	0.000	13.667	0.333	3	21.01151	0.73160
99	BTON	2014	0.3062248	0.3062248	51.000	0.000	0.000	3.500	0.500	2	18.97508	0.15628
100	CINT	2014	0.0258482	0.0258482	56.500	0.000	0.000	0.000	0.000	2	19.72952	0.20638
101	CLPI	2014	0.1994318	0.1994318	58.000	0.333	0.000	17.333	0.000	3	20.08927	0.39557
102	CTBN	2014	0.2407625	0.2407625	61.250	0.000	0.333	5.167	0.167	6	14.99011	0.44196
103	DLTA	2014	0.4291963	0.4291963	59.333	0.000	0.500	5.167	0.167	6	20.72071	0.23765
104	DPNS	2014	0.3618824	0.3618824	54.667	0.000	0.000	2.667	0.333	3	19.40982	0.12217
105	DSNG	2014	-0.2165020	0.2165020	65.333	0.000	0.000	10.500	0.167	6	22.69063	0.66957
106	DVLA	2014	0.1538760	0.1538760	60.500	0.167	0.667	10.667	0.000	6	20.93938	0.23669
107	ERTX	2014	0.1124774	0.1124774	47.667	0.250	0.250	2.000	0.500	4	13.27027	0.74697
108	ESTI	2014	0.0427489	0.0427489	58.000	0.333	0.000	27.667	0.667	3	20.65684	0.61334
109	FISH	2014	0.3952075	0.3952075	61.667	0.000	0.000	1.000	0.333	3	21.64163	0.74344
110	FPNI	2014	-0.0409842	0.0409842	59.000	0.000	0.500	1.000	0.000	2	14.97466	0.63744
111	GDST	2014	-0.1434465	0.1434465	56.333	0.000	0.667	5.000	0.667	3	21.02923	0.36630
112	GDYR	2014	0.0132379	0.0132379	60.000	0.000	0.667	2.500	0.333	3	21.24921	0.50980
113	GEMA	2014	0.2593960	0.2593960	63.000	0.000	0.000	7.667	0.000	3	19.85513	0.60970
114	GREN	2014	-0.0878460	0.0878460	59.000	0.000	0.000	3.000	0.000	2	20.29552	0.26982
115	HMSP	2014	0.1261025	0.1261025	63.000	0.167	0.667	5.000	0.000	6	24.06897	0.52439
116	IGAR	2014	0.2183415	0.2183415	65.000	0.000	0.000	3.000	0.000	3	19.67521	0.26509

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117	IKBI	2014	-0.0044188	0.0044188	52.000	0.000	0.667	1.000	0.333	3	20.73656	0.20022
118	IMAS	2014	0.1916550	0.1916550	64.333	0.000	0.143	12.429	0.286	7	23.87915	0.71373
119	IMPC	2014	0.2381862	0.2381862	65.000	0.000	0.500	3.500	0.500	2	21.27740	0.44075
120	INAF	2014	-0.0194068	0.0194068	49.000	0.333	0.000	1.000	0.000	3	20.94622	0.52975
121	INCI	2014	0.1463222	0.1463222	63.333	0.000	0.000	14.000	0.000	3	18.81107	0.07667
122	INDR	2014	-0.1090833	0.1090833	59.000	0.200	0.400	19.000	0.000	5	22.94464	0.59025
123	INDS	2014	-0.0106121	0.0106121	61.667	0.000	0.000	17.000	0.000	3	21.54861	0.20152
124	INTD	2014	0.3404609	0.3404609	44.333	0.333	0.000	5.667	0.000	3	17.73904	0.44028
125	INTP	2014	0.0278783	0.0278783	58.286	0.000	0.571	7.571	0.143	7	24.08658	0.14913
126	IPOL	2014	-0.0998845	0.0998845	58.667	0.333	0.000	10.333	0.333	3	21.99034	0.46070
127	JAWA	2014	-0.3152567	0.3152567	58.333	0.667	0.000	4.333	0.667	3	21.84237	0.57183
128	JECC	2014	0.2305829	0.2305829	65.333	0.333	0.000	23.333	0.333	3	20.78542	0.84363
129	JPFA	2014	-0.1023336	0.1023336	67.000	0.333	0.000	2.333	0.333	3	23.48067	0.67133
130	JPRS	2014	0.3365853	0.3365853	63.500	0.000	0.000	13.500	0.500	2	19.73431	0.06099
131	KAEF	2014	0.1316302	0.1316302	59.400	0.200	0.000	1.400	0.200	5	21.82613	0.42874
132	KARW	2014	0.0529483	0.0529483	53.667	0.000	0.667	1.333	0.000	3	20.31911	1.18350
133	KBLI	2014	0.1213835	0.1213835	69.000	0.000	0.000	11.600	0.000	5	21.01659	0.30893
134	KDSI	2014	0.0429535	0.0429535	66.667	0.000	0.000	18.667	0.000	3	20.68279	0.61260
135	KIAS	2014	-0.0169236	0.0169236	59.000	0.000	1.000	3.000	0.000	6	21.54227	0.11001
136	KKGI	2014	0.3843053	0.3843053	56.000	0.000	0.200	4.600	0.600	5	21.00202	0.30482
137	KLBF	2014	0.0747771	0.0747771	56.500	0.167	0.000	6.333	0.000	6	23.24412	0.21506
138	KOBX	2014	0.3169142	0.3169142	55.333	0.000	0.000	8.333	0.000	3	21.15204	0.67700
139	KRAH	2014	0.5638180	0.5638180	59.000	0.000	0.000	8.667	0.000	3	19.98999	0.61819
140	LAPD	2014	-0.2259270	0.2259270	46.000	0.000	0.000	2.000	0.500	2	20.65904	0.32097

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141	LION	2014	0.1480893	0.1480893	60.000	0.000	0.667	16.333	0.333	3	20.22101	0.29617
142	LMPI	2014	0.2207712	0.2207712	53.500	0.000	0.000	5.000	0.500	2	20.51118	0.51087
143	LMSH	2014	0.1941126	0.1941126	63.333	0.000	0.333	8.000	0.000	3	18.76452	0.20167
144	LPIN	2014	0.3687727	0.3687727	58.500	0.000	0.000	0.750	0.000	4	19.01280	0.26898
145	LTLS	2014	0.1863120	0.1863120	74.500	0.250	0.000	19.500	0.250	4	22.26548	0.67169
146	MASA	2014	-0.0880802	0.0880802	52.600	0.000	0.200	7.200	0.200	5	22.77500	0.40217
147	MERK	2014	0.1824510	0.1824510	58.000	0.000	0.667	1.667	0.667	3	20.38226	0.23460
148	MLIA	2014	-0.1973998	0.1973998	56.800	0.200	0.200	1.200	0.400	5	22.70025	0.83958
149	MRAT	2014	0.2629465	0.2629465	63.000	0.000	0.000	9.333	0.000	3	20.03040	0.24230
150	MYOR	2014	0.1447024	0.1447024	66.000	0.000	0.000	8.800	0.400	5	23.05522	0.60409
151	MYTX	2014	-0.1483115	0.1483115	69.500	0.000	0.000	9.000	0.000	4	21.43736	1.13312
152	NIKL	2014	0.2912092	0.2912092	56.167	0.000	0.500	3.000	0.000	6	21.13995	0.72017
153	NIPS	2014	0.0689210	0.0689210	58.333	0.333	0.000	11.000	0.667	3	20.91128	0.51757
154	PALM	2014	-0.2356321	0.2356321	57.667	0.000	0.000	2.333	0.333	6	22.16316	0.60031
155	PBRX	2014	0.1049531	0.1049531	50.000	0.000	0.000	1.667	1.000	3	22.24255	0.45157
156	PICO	2014	0.1693677	0.1693677	43.333	0.333	0.000	10.333	0.667	3	20.25586	0.63212
157	PLAS	2014	0.2988416	0.2988416	53.500	0.000	0.000	6.000	0.000	2	19.70989	0.34997
158	PSDN	2014	0.2033991	0.2033991	63.167	0.000	0.000	14.333	0.333	6	20.24927	0.40286
159	PTSN	2014	0.5129740	0.5129740	56.333	0.000	0.000	7.000	0.000	3	20.51684	0.25714
160	RICY	2014	0.0362781	0.0362781	50.333	0.000	0.000	5.667	0.333	3	20.88199	0.66701
161	SDPC	2014	0.2128198	0.2128198	59.400	0.200	0.600	1.750	0.200	5	20.08842	0.77035
162	SIAP	2014	0.3834515	0.3834515	59.500	0.000	0.000	0.000	0.250	4	19.52845	0.80106
163	SIMA	2014	0.1259698	0.1259698	51.750	0.000	0.000	3.000	0.500	4	17.95240	0.49850
164	SIPD	2014	0.3235116	0.3235116	64.000	0.333	0.000	9.333	0.000	3	21.75274	0.53915

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165	SKBM	2014	-0.0842652	0.0842652	59.333	0.000	0.000	12.000	0.000	3	20.29705	0.52890
166	SKLT	2014	-0.1294265	0.1294265	57.500	0.000	0.000	24.667	0.333	3	19.63539	0.59251
167	SMBR	2014	0.2042448	0.2042448	60.400	0.200	0.000	4.000	0.200	5	21.79775	0.08379
168	SMGR	2014	-0.1170839	0.1170839	56.857	0.000	0.000	1.571	0.000	7	24.25933	0.27167
169	SMSM	2014	0.0720160	0.0720160	65.667	0.000	0.000	15.333	0.000	3	21.28723	0.36157
170	SPMA	2014	-0.1733894	0.1733894	56.600	0.000	0.000	7.600	0.000	5	21.46137	0.61960
171	SRSN	2014	0.0895991	0.0895991	63.750	0.000	0.125	8.125	0.250	8	19.95744	0.30308
172	STAR	2014	0.1539461	0.1539461	56.000	0.500	0.000	1.500	0.000	2	20.46956	0.36989
173	SULI	2014	-0.1029603	0.1029603	66.000	0.333	0.000	5.667	0.333	3	20.62239	1.42020
174	TCID	2014	-0.0897728	0.0897728	56.250	0.000	0.333	7.000	0.000	6	21.34582	0.32812
175	TFCO	2014	-0.1029083	0.1029083	67.000	0.000	0.000	4.000	0.000	3	22.16630	0.15765
176	TPIA	2014	-0.0876066	0.0876066	61.714	0.143	0.571	2.714	0.571	7	22.16630	0.15765
177	TRIS	2014	0.1995415	0.1995415	53.333	0.000	0.000	2.333	0.000	3	20.07303	0.40882
178	TSPC	2014	0.1145438	0.1145438	59.500	0.500	0.000	13.500	0.250	4	22.44774	0.27229
179	UNIT	2014	-0.1816784	0.1816784	53.500	0.000	0.000	2.000	0.500	2	19.90347	0.45010
180	UNVR	2014	-0.1834207	0.1834207	57.750	0.000	0.000	7.400	0.400	5	23.38217	0.66763
181	VOKS	2014	0.2528730	0.2528730	57.000	0.200	0.200	4.000	0.400	5	21.16664	0.67665
182	WAPO	2014	-0.1158559	0.1158559	42.000	0.500	0.000	1.500	0.500	2	18.50725	0.86091
183	WIIM	2014	0.2013199	0.2013199	59.333	0.333	0.000	14.000	0.333	3	21.01186	0.36578
184	WTON	2014	-0.0607356	0.0607356	55.000	0.333	0.000	1.500	0.167	6	22.05897	0.42078
185	YPAS	2014	0.0601700	0.0601700	61.667	0.000	0.000	12.333	0.000	3	19.58659	0.49914
186	ADMG	2015	0.0133990	0.0133990	63.000	0.000	0.000	6.200	0.200	5	22.48010	0.36247
187	AISA	2015	0.0164140	0.0164140	52.800	0.000	0.000	8.750	0.200	5	22.92724	0.56220
188	ALKA	2015	0.9135769	0.9135769	64.667	0.000	0.000	13.000	0.333	3	18.78968	0.57109

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189	ALTO	2015	0.0375627	0.0375627	48.333	0.333	0.000	7.000	0.333	3	20.88897	0.57045
190	AMIN	2015	0.1185188	0.1185188	47.000	0.500	0.000	0.000	0.500	2	19.10869	0.35890
191	APLI	2015	-0.1020537	0.1020537	54.667	0.000	0.000	12.333	0.333	3	19.54762	0.28209
192	AUTO	2015	0.1459624	0.1459624	57.667	0.000	0.222	3.556	0.333	9	23.38626	0.29260
193	BAJA	2015	0.1508102	0.1508102	65.333	0.000	0.000	16.000	0.333	3	20.67058	0.82963
194	BNBR	2015	0.1304176	0.1304176	67.667	0.000	0.000	16.667	0.000	3	22.94502	1.42366
195	BRAM	2015	-0.0636267	0.0636267	53.400	0.200	0.800	4.000	0.200	5	22.11600	0.37316
196	BRNA	2015	-0.4177986	0.4177986	67.000	0.000	0.000	16.000	0.000	2	21.32253	0.54530
197	BTON	2015	0.3848181	0.3848181	52.000	0.000	0.000	4.500	0.500	2	19.02563	0.18574
198	CINT	2015	0.0343739	0.0343739	57.500	0.000	0.000	1.000	0.000	2	19.76304	0.17694
199	CLPI	2015	0.2827323	0.2827323	59.000	0.333	0.000	18.333	0.000	3	20.11423	0.30514
200	CTBN	2015	0.2377396	0.2377396	62.250	0.000	0.333	6.167	0.167	6	14.93725	0.43290
201	DLTA	2015	0.2478532	0.2478532	58.750	0.000	0.500	3.500	0.167	6	20.76087	0.18174
202	DPNS	2015	0.3281991	0.3281991	55.667	0.000	0.000	3.667	0.333	3	19.43040	0.12091
203	DSNG	2015	-0.0210693	0.0210693	66.333	0.000	0.000	11.500	0.167	6	22.78420	0.68077
204	DVLA	2015	0.0523705	0.0523705	61.500	0.167	0.667	11.667	0.000	6	21.04265	0.29264
205	ERTX	2015	-0.0633716	0.0633716	48.000	0.250	0.250	2.250	0.500	4	13.50218	0.67662
206	ESTI	2015	-0.0044437	0.0044437	59.000	0.333	0.000	28.667	0.667	3	20.45364	0.79145
207	FISH	2015	0.8267564	0.8267564	60.500	0.000	0.000	1.500	0.500	4	22.16998	0.79520
208	FPNI	2015	0.2050975	0.2050975	60.000	0.000	0.500	2.000	0.000	2	14.98366	0.58784
209	GDST	2015	0.0951591	0.0951591	57.333	0.000	0.667	6.000	0.667	3	20.89211	0.32056
210	GDYR	2015	-0.0195850	0.0195850	61.000	0.000	0.667	3.500	0.333	3	21.19522	0.54929
211	GEMA	2015	0.0817115	0.0817115	64.000	0.000	0.000	8.667	0.000	3	19.92008	0.57988
212	GREN	2015	-0.1261157	0.1261157	55.500	0.500	0.000	1.000	0.000	2	20.28201	0.27533

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213	HMSP	2015	0.6061699	0.6061699	64.000	0.167	0.667	6.000	0.000	6	24.36113	0.15771
214	ICBP	2015	0.1166547	0.1166547	63.200	0.000	0.000	6.500	0.500	6	24.00270	0.38304
215	IGAR	2015	0.1711794	0.1711794	66.000	0.000	0.000	4.000	0.000	2	19.76599	0.19136
216	IKBI	2015	0.2444973	0.2444973	53.000	0.000	0.667	2.000	0.333	3	20.74564	0.20057
217	IMAS	2015	0.1894043	0.1894043	64.714	0.000	0.143	12.857	0.286	7	23.93656	0.73062
218	IMPC	2015	0.2332025	0.2332025	66.000	0.000	0.500	4.500	0.500	2	21.23922	0.34524
219	INAF	2015	-0.0587861	0.0587861	53.667	0.333	0.000	1.333	0.333	3	21.15095	0.61355
220	INCI	2015	0.0137101	0.0137101	64.333	0.000	0.000	15.000	0.000	3	18.94864	0.09139
221	INDR	2015	0.0706297	0.0706297	60.000	0.200	0.400	20.000	0.000	5	23.12676	0.65020
222	INDS	2015	-0.0647332	0.0647332	62.667	0.000	0.000	18.000	0.000	3	21.66090	0.24859
223	INTD	2015	0.2733252	0.2733252	45.333	0.333	0.000	6.667	0.000	3	17.67994	0.34224
224	INTP	2015	0.0469561	0.0469561	60.286	0.000	0.714	10.000	0.143	7	24.04247	0.13649
225	IPOL	2015	-0.1290479	0.1290479	61.000	0.333	0.000	8.333	0.333	3	22.07739	0.45437
226	JAWA	2015	-0.2542697	0.2542697	59.333	0.667	0.000	5.333	0.667	3	21.93763	0.61702
227	JECC	2015	0.0049466	0.0049466	66.333	0.333	0.000	24.333	0.333	3	21.02962	0.72929
228	JPFA	2015	-0.0144636	0.0144636	67.500	0.250	0.000	6.750	0.500	4	23.56582	0.64395
229	JPRS	2015	0.4451021	0.4451021	60.000	0.000	0.000	9.667	0.667	3	19.71064	0.08480
230	KAEF	2015	0.1699645	0.1699645	60.400	0.200	0.000	2.400	0.200	5	21.95725	0.40127
231	KARW	2015	-0.4722898	0.4722898	54.667	0.000	0.667	2.333	0.000	3	19.56653	2.71104
232	KBLI	2015	0.0580080	0.0580080	72.800	0.000	0.000	11.800	0.000	5	21.16268	0.33795
233	KBRI	2015	-0.2817652	0.2817652	50.000	0.500	0.000	0.500	1.000	2	21.09891	0.64198
234	KDSI	2015	0.1029987	0.1029987	64.000	0.000	0.000	22.500	0.000	4	20.88631	0.67809
235	KIAS	2015	-0.0417280	0.0417280	60.000	0.000	1.000	4.000	0.000	6	21.45744	0.15236
236	KINO	2015	0.2272475	0.2272475	62.000	0.000	0.000	1.000	0.333	3	21.88992	0.44675

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237	KKGI	2015	0.2489284	0.2489284	57.000	0.000	0.200	5.600	0.600	5	21.03030	0.22103
238	KLBF	2015	0.0798345	0.0798345	57.143	0.143	0.000	5.286	0.143	7	23.34040	0.20138
239	KOBX	2015	0.3682519	0.3682519	56.333	0.000	0.000	9.333	0.000	3	21.03739	0.66076
240	KRAH	2015	0.2537684	0.2537684	60.000	0.000	0.000	9.667	0.000	3	20.09504	0.66905
241	KRAS	2015	-0.2120084	0.2120084	58.833	0.000	0.000	1.500	0.333	6	24.65648	0.51701
242	LAPD	2015	-0.3017704	0.3017704	40.500	0.000	0.000	0.500	0.500	2	20.57494	0.35632
243	LION	2015	0.1858960	0.1858960	61.000	0.000	0.667	17.333	0.333	3	20.27593	0.28894
244	LMPI	2015	0.1405631	0.1405631	54.500	0.000	0.000	6.000	0.500	2	20.49145	0.49412
245	LMSH	2015	0.3657790	0.3657790	64.333	0.000	0.333	9.000	0.000	3	18.71173	0.15952
246	LPIN	2015	-0.3961018	0.3961018	59.500	0.000	0.000	1.750	0.000	4	19.59642	0.64052
247	LTLS	2015	0.0859383	0.0859383	73.000	0.200	0.000	16.400	0.200	5	22.40843	0.69970
248	MARI	2015	0.3391583	0.3391583	45.000	0.000	0.000	0.000	0.333	3	18.86706	0.43516
249	MASA	2015	-0.1502274	0.1502274	53.600	0.000	0.200	8.200	0.200	5	22.83413	0.42274
250	MERK	2015	0.3359852	0.3359852	54.667	0.000	0.667	1.667	0.667	3	20.27955	0.26199
251	MLIA	2015	-0.2152138	0.2152138	57.800	0.200	0.200	2.200	0.400	5	22.68699	0.84351
252	MRAT	2015	0.2687669	0.2687669	64.000	0.000	0.000	10.333	0.000	3	20.02428	0.24153
253	MYOR	2015	-0.0178449	0.0178449	67.000	0.000	0.000	9.800	0.400	5	23.15184	0.54204
254	MYTX	2015	-0.0397559	0.0397559	70.500	0.000	0.000	10.000	0.000	4	21.38818	1.29209
255	NIKL	2015	0.1241360	0.1241360	56.167	0.000	0.500	3.333	0.000	6	21.17356	0.67051
256	NIPS	2015	-0.1242907	0.1242907	59.333	0.333	0.000	12.000	0.667	3	21.16005	0.60652
257	PALM	2015	-0.2637433	0.2637433	52.333	0.000	0.000	2.833	0.333	6	22.27018	0.64077
258	PBRX	2015	0.1384553	0.1384553	47.000	0.333	0.000	4.667	0.667	3	22.54599	0.50596
259	PICO	2015	0.1000154	0.1000154	44.333	0.333	0.000	11.333	0.667	3	20.22204	0.59212
260	PLAS	2015	0.3133057	0.3133057	54.500	0.000	0.000	7.000	0.000	2	19.65083	0.33829

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261	PSDN	2015	0.0219974	0.0219974	64.167	0.000	0.000	15.333	0.333	6	20.24587	0.47724
262	PTSN	2015	0.1647310	0.1647310	45.333	0.333	0.000	8.000	0.333	3	20.59110	0.22748
263	RICY	2015	0.0714453	0.0714453	51.333	0.000	0.000	6.667	0.333	3	20.90408	0.66610
264	RMBA	2015	0.1841501	0.1841501	55.250	0.000	0.500	2.750	0.500	4	23.26229	1.24857
265	SDPC	2015	0.2694510	0.2694510	57.500	0.250	0.750	3.333	0.250	4	20.26632	0.78789
266	SIPD	2015	-0.0064680	0.0064680	61.000	0.333	0.000	8.667	0.000	3	21.53276	0.67320
267	SKBM	2015	0.0094689	0.0094689	60.333	0.000	0.000	13.000	0.000	3	20.45471	0.54991
268	SKLT	2015	-0.0407370	0.0407370	58.500	0.000	0.000	25.667	0.333	3	19.74805	0.59682
269	SMBR	2015	0.0578154	0.0578154	57.500	0.167	0.000	4.167	0.167	6	21.90765	0.09769
270	SMGR	2015	-0.1847313	0.1847313	57.857	0.000	0.000	2.571	0.000	7	24.36487	0.28077
271	SMSM	2015	-0.0032615	0.0032615	60.000	0.000	0.000	6.333	0.333	3	21.52082	0.35127
272	SPMA	2015	-0.1653829	0.1653829	57.600	0.000	0.000	8.600	0.000	5	21.50509	0.65560
273	SRSN	2015	0.3214523	0.3214523	64.750	0.000	0.125	9.125	0.250	8	20.16827	0.40760
274	STAR	2015	-0.0091985	0.0091985	57.000	0.500	0.000	2.500	0.000	2	20.40721	0.32831
275	SULI	2015	-0.1178037	0.1178037	64.500	0.250	0.000	5.000	0.250	4	20.88265	1.25418
276	TCID	2015	0.2720678	0.2720678	55.600	0.000	0.333	7.000	0.000	6	21.45664	0.17637
277	TFCO	2015	-0.0548728	0.0548728	68.000	0.000	0.000	5.000	0.000	3	22.19246	0.09410
278	TPIA	2015	0.1188226	0.1188226	58.571	0.143	0.571	2.571	0.571	7	22.19246	0.09410
279	TRIS	2015	0.0365708	0.0365708	54.333	0.000	0.000	3.333	0.000	3	20.17471	0.41534
280	TSPC	2015	0.0560438	0.0560438	61.500	0.750	0.000	14.500	0.250	4	22.56139	0.30989
281	UNIT	2015	-0.0674634	0.0674634	46.500	0.000	0.000	2.500	0.000	2	19.94791	0.47241
282	UNVR	2015	-0.1047691	0.1047691	57.600	0.000	0.000	6.400	0.600	5	23.47883	0.69311
283	VOKS	2015	0.3167451	0.3167451	54.800	0.400	0.200	3.800	0.400	5	21.15261	0.66825
284	WAPO	2015	0.2019348	0.2019348	43.000	0.500	0.000	2.500	0.500	2	18.49366	0.85636

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285	WIIM	2015	0.3409141	0.3409141	60.333	0.333	0.000	15.000	0.333	3	21.01795	0.29716
286	WTON	2015	0.0202579	0.0202579	56.000	0.333	0.000	2.500	0.167	6	22.21754	0.49206
287	YPAS	2015	0.0585090	0.0585090	62.667	0.000	0.000	13.333	0.000	3	19.44740	0.46130
288	ADMG	2016	-0.0847331	0.0847331	63.000	0.000	0.000	8.250	0.333	3	22.35585	0.35549
289	AGII	2016	-0.2051073	0.2051073	65.000	0.000	0.000	7.833	0.000	6	22.48932	0.52788
290	AISA	2016	0.1584904	0.1584904	53.800	0.000	0.000	9.750	0.200	5	22.94838	0.53921
291	ALKA	2016	-1.1378663	1.1378663	56.667	0.333	0.000	11.667	0.667	3	18.73271	0.55274
292	ALTO	2016	-0.0219786	0.0219786	49.500	0.000	0.000	5.500	0.500	2	20.87607	0.58729
293	AMIN	2016	0.2797995	0.2797995	48.000	0.500	0.000	1.000	0.500	2	19.34673	0.40042
294	APLI	2016	-0.2754122	0.2754122	57.000	0.000	0.000	11.500	0.000	2	19.76214	0.30520
295	AUTO	2016	0.1006629	0.1006629	60.625	0.000	0.125	4.375	0.250	8	23.40513	0.27892
296	BAJA	2016	0.2876211	0.2876211	66.333	0.000	0.000	17.000	0.333	3	20.70574	0.80002
297	BNBR	2016	-0.1447496	0.1447496	68.667	0.000	0.000	17.667	0.000	3	22.60402	1.92278
298	BRAM	2016	-0.1155230	0.1155230	54.800	0.000	0.800	3.400	0.200	5	22.10401	0.33208
299	BRNA	2016	-0.1156715	0.1156715	62.500	0.000	0.000	11.750	0.250	4	21.45981	0.50766
300	BTON	2016	0.2618761	0.2618761	53.000	0.000	0.000	5.500	0.500	2	18.99330	0.19041
301	CINT	2016	-0.0305665	0.0305665	58.500	0.000	0.000	2.000	0.000	2	19.80532	0.18257
302	CITA	2016	-0.0092995	0.0092995	53.000	0.000	0.000	0.667	0.333	3	21.72618	0.64683
303	CLPI	2016	-0.0091363	0.0091363	60.000	0.333	0.000	19.333	0.000	3	20.15686	0.24455
304	CTBN	2016	0.0453960	0.0453960	62.000	0.000	0.667	6.500	0.333	6	14.57851	0.26314
305	DLTA	2016	0.2212727	0.2212727	57.200	0.000	0.400	3.400	0.200	5	20.90375	0.15480
306	DPNS	2016	0.2700966	0.2700966	56.667	0.000	0.000	4.667	0.333	3	19.50631	0.11098
307	DPUM	2016	0.1234207	0.1234207	49.000	0.000	0.000	0.333	0.000	3	21.24566	0.23371
308	DSNG	2016	-0.0228245	0.0228245	66.750	0.000	0.000	10.875	0.125	8	22.82536	0.66953

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309	DVLA	2016	0.0909332	0.0909332	64.000	0.143	0.571	10.857	0.000	7	21.14943	0.29502
310	ERTX	2016	-0.1681027	0.1681027	46.000	0.333	0.333	3.000	0.333	3	13.46953	0.62018
311	ESTI	2016	0.2258026	0.2258026	60.000	0.333	0.000	29.667	0.667	3	20.31407	0.67327
312	FISH	2016	0.3298034	0.3298034	61.500	0.000	0.000	2.500	0.500	4	21.97020	0.68011
313	FPNI	2016	0.0796199	0.0796199	61.000	0.000	0.500	3.000	0.000	2	14.82728	0.52155
314	GDST	2016	-0.0483010	0.0483010	58.667	0.000	0.667	7.000	0.667	3	20.95248	0.33833
315	GEMA	2016	0.0873940	0.0873940	65.000	0.000	0.000	9.667	0.000	3	20.33943	0.41950
316	HMSP	2016	0.0553040	0.0553040	63.200	0.200	0.400	4.200	0.000	5	24.47296	0.19604
317	ICBP	2016	0.0844417	0.0844417	65.000	0.000	0.000	7.000	0.500	6	24.08717	0.35988
318	IGAR	2016	0.0978178	0.0978178	67.000	0.000	0.333	3.333	0.000	3	19.90107	0.14954
319	IKBI	2016	-0.0118915	0.0118915	54.000	0.000	0.667	3.000	0.333	3	20.80920	0.19540
320	IMAS	2016	0.2538247	0.2538247	65.714	0.000	0.143	13.857	0.286	7	23.96716	0.73824
321	IMPC	2016	0.0644290	0.0644290	62.333	0.000	0.333	3.667	0.333	3	21.54570	0.46150
322	INAF	2016	0.3398141	0.3398141	54.667	0.333	0.000	2.333	0.333	3	21.04653	0.58328
323	INCI	2016	-0.0645106	0.0645106	65.333	0.000	0.000	16.000	0.000	3	19.41153	0.09848
324	INDF	2016	0.0629592	0.0629592	68.125	0.000	0.500	8.750	0.500	8	25.13211	0.46527
325	INDR	2016	-0.1211050	0.1211050	61.000	0.200	0.400	21.000	0.000	5	23.15110	0.66458
326	INDS	2016	-0.0485889	0.0485889	63.667	0.000	0.000	19.000	0.000	3	21.63042	0.16519
327	INTD	2016	0.3998536	0.3998536	39.000	0.333	0.000	3.333	0.000	3	17.66056	0.26906
328	INTP	2016	0.0613392	0.0613392	59.857	0.000	0.714	9.286	0.143	7	24.12947	0.13306
329	IPOL	2016	-0.0591703	0.0591703	62.000	0.333	0.000	9.333	0.333	3	22.05852	0.44871
330	JAWA	2016	-0.2734585	0.2734585	59.333	0.667	0.000	6.333	0.667	3	21.91449	0.68086
331	JECC	2016	-0.0013145	0.0013145	67.333	0.333	0.000	25.333	0.333	3	21.18524	0.70367
332	JPFA	2016	-0.0301936	0.0301936	63.800	0.200	0.000	8.333	0.400	5	23.68083	0.51312

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333	JPRS	2016	0.2688648	0.2688648	61.000	0.000	0.000	10.667	0.667	3	19.67720	0.12270
334	KAEF	2016	0.0612008	0.0612008	58.200	0.200	0.000	2.400	0.000	5	22.25205	0.50756
335	KARW	2016	-0.2890062	0.2890062	55.667	0.000	0.667	3.333	0.000	3	19.61583	2.49152
336	KBLI	2016	0.0283712	0.0283712	72.000	0.000	0.000	17.000	0.000	5	21.34996	0.29394
337	KBRI	2016	-0.2345398	0.2345398	51.000	0.500	0.000	1.500	1.000	2	20.95733	0.66832
338	KDSI	2016	-0.0048169	0.0048169	65.000	0.000	0.000	23.500	0.000	4	20.85629	0.63250
339	KIAS	2016	-0.2026442	0.2026442	58.250	0.000	1.000	3.750	0.000	8	21.34366	0.18263
340	KINO	2016	0.1546242	0.1546242	58.000	0.000	0.000	1.500	0.250	4	21.91248	0.40567
341	KKGI	2016	0.1854528	0.1854528	58.000	0.000	0.200	6.600	0.600	5	21.00561	0.14485
342	KLBF	2016	0.0960815	0.0960815	58.143	0.143	0.000	6.286	0.143	7	23.44627	0.18141
343	KOBX	2016	0.2179180	0.2179180	57.333	0.000	0.000	10.333	0.000	3	20.86604	0.67616
344	KRAH	2016	0.0439175	0.0439175	61.750	0.000	0.000	8.000	0.000	4	20.21029	0.70245
345	KRAS	2016	-0.1424003	0.1424003	57.600	0.000	0.000	1.800	0.600	5	24.69155	0.53269
346	LAPD	2016	-0.2984229	0.2984229	41.500	0.000	0.000	1.500	0.500	2	20.45247	0.34572
347	LION	2016	0.2035032	0.2035032	62.000	0.000	0.667	18.333	0.333	3	20.34612	0.31380
348	LMPI	2016	0.1382258	0.1382258	55.500	0.000	0.000	7.000	0.500	2	20.51300	0.49631
349	LMSH	2016	0.0933657	0.0933657	67.000	0.000	0.000	5.000	0.000	3	18.90821	0.27951
350	LPIN	2016	-0.0984098	0.0984098	59.667	0.000	0.000	3.000	0.000	3	19.98478	0.89202
351	MARI	2016	0.1846294	0.1846294	53.000	0.000	0.000	0.750	0.500	4	19.16670	0.16894
352	MASA	2016	-0.1345316	0.1345316	54.600	0.000	0.200	9.200	0.200	5	22.82649	0.44408
353	MERK	2016	0.3240935	0.3240935	55.667	0.000	0.667	2.667	0.667	3	20.42746	0.21677
354	MLBI	2016	-0.2683165	0.2683165	61.143	0.000	0.429	5.857	0.571		21.54526	0.63929
355	MLIA	2016	-0.2146138	0.2146138	60.800	0.200	0.200	2.400	0.200	5	22.76754	0.79115
356	MRAT	2016	0.3231701	0.3231701	65.000	0.000	0.000	11.333	0.000	3	19.99560	0.23590

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357	MYOR	2016	0.0807326	0.0807326	68.000	0.000	0.000	10.800	0.400	5	23.28223	0.51516
358	NIKL	2016	0.1018431	0.1018431	56.333	0.000	0.667	1.333	0.000	3	21.19817	0.66568
359	NIPS	2016	0.0962162	0.0962162	60.333	0.333	0.000	13.000	0.667	3	21.29873	0.52610
360	PALM	2016	-0.0202467	0.0202467	53.333	0.000	0.000	3.833	0.333	6	22.07413	0.39745
361	PBRX	2016	0.2098262	0.2098262	52.000	0.000	0.000	3.667	1.000	3	22.66633	0.56181
362	PICO	2016	0.2053416	0.2053416	45.333	0.333	0.000	12.333	0.667	3	20.27474	0.58369
363	PLAS	2016	0.1845299	0.1845299	55.500	0.000	0.000	8.000	0.000	2	19.68340	0.41263
364	PSDN	2016	-0.0457054	0.0457054	65.167	0.000	0.000	16.333	0.333	6	20.29831	0.57130
365	PTSN	2016	-0.0511606	0.0511606	46.333	0.333	0.000	9.000	0.333	3	20.60341	0.23819
366	RICY	2016	0.0728162	0.0728162	52.333	0.000	0.000	7.667	0.333	3	20.97689	0.67991
367	RMBA	2016	-0.3188868	0.3188868	56.000	0.000	0.250	2.500	0.500	4	23.32380	0.29913
368	SDPC	2016	0.1970783	0.1970783	58.500	0.250	0.750	4.333	0.250	4	20.41326	0.80465
369	SIPD	2016	0.0490007	0.0490007	70.000	0.333	0.000	9.667	0.000	3	21.66609	0.55484
370	SKBM	2016	0.0162748	0.0162748	52.333	0.333	0.333	9.333	0.000	3	20.72492	0.63222
371	SKLT	2016	-0.1731543	0.1731543	58.000	0.000	0.000	20.000	0.500	4	20.15805	0.47883
372	SMBR	2016	-0.2323104	0.2323104	65.400	0.000	0.000	5.600	0.200	5	22.19777	0.28568
373	SMGR	2016	-0.1582681	0.1582681	56.500	0.000	0.000	1.500	0.000	7	24.51260	0.30869
374	SMSM	2016	0.1200225	0.1200225	61.000	0.000	0.000	7.333	0.333	3	21.53630	0.29923
375	SPMA	2016	-0.2226253	0.2226253	58.600	0.000	0.000	9.600	0.000	5	21.49284	0.50013
376	SRSN	2016	-0.0639260	0.0639260	65.750	0.000	0.125	10.125	0.250	8	20.39080	0.43937
377	STAR	2016	0.1007496	0.1007496	35.500	0.500	0.000	1.500	0.500	2	20.35247	0.29001
378	SULI	2016	-0.0526251	0.0526251	65.500	0.250	0.000	6.000	0.250	4	20.93057	1.16864
379	TCID	2016	-0.0550717	0.0550717	56.600	0.000	0.400	7.200	0.000	5	21.50493	0.18395
380	TFCO	2016	-0.1584646	0.1584646	69.000	0.000	0.000	6.000	0.000	3	22.18888	0.09516

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381	TPIA	2016	-0.2990721	0.2990721	59.571	0.143	0.571	3.571	0.571	7	24.07698	0.46382
382	TRIS	2016	0.1733097	0.1733097	56.333	0.333	0.000	4.333	0.333	3	20.27651	0.45814
383	TSPC	2016	0.0890711	0.0890711	62.167	0.667	0.000	10.333	0.167	6	22.60818	0.29617
384	UNIT	2016	-0.1223035	0.1223035	47.500	0.000	0.000	3.500	0.000	2	19.88605	0.43633
385	UNVR	2016	-0.1424900	0.1424900	58.600	0.000	0.000	7.400	0.600	5	23.54141	0.71908
386	VOKS	2016	0.0863720	0.0863720	58.143	0.333	0.167	6.000	0.333	6	21.23502	0.59895
387	WAPO	2016	-0.2137473	0.2137473	44.000	0.500	0.000	3.500	0.500	2	18.47796	0.94756
388	WIIM	2016	0.1652873	0.1652873	61.333	0.333	0.000	16.000	0.333	3	21.02606	0.26783
389	WSBP	2016	0.9509363	0.9509363	55.000	0.000	0.000	1.250	0.000	4	23.34316	0.46080
390	WTON	2016	0.0326137	0.0326137	57.000	0.333	0.000	2.500	0.167	6	22.26278	0.46583
391	YPAS	2016	0.0187575	0.0187575	51.333	0.333	0.000	11.333	0.333	3	19.45122	0.49332
392	ADMG	2017	-0.1614009	0.1614009	63.750	0.000	0.000	9.250	0.500	4	22.34630	0.35957
393	AISA	2017	0.2221801	0.2221801	54.800	0.000	0.000	10.750	0.200	5	22.88943	0.60974
394	APLI	2017	-0.2219359	0.2219359	62.333	0.000	0.333	12.000	0.667	3	19.80372	0.43019
395	AUTO	2017	0.1684555	0.1684555	61.250	0.000	0.125	4.625	0.125	8	23.41534	0.27118
396	BNBR	2017	-0.1756832	0.1756832	69.667	0.000	0.000	18.667	0.000	3	22.61108	1.90781
397	BRAM	2017	-0.0412504	0.0412504	59.400	0.000	0.800	4.000	0.200	5	22.14037	0.28709
398	BRNA	2017	-0.0687199	0.0687199	59.400	0.000	0.200	11.600	0.400	5	21.39870	0.56586
399	CTBN	2017	-0.4955047	0.4955047	60.875	0.000	0.625	5.625	0.375	8	14.52096	0.29542
400	DLTA	2017	0.2161736	0.2161736	58.200	0.000	0.400	4.400	0.200	5	21.01656	0.14632
401	DPNS	2017	0.3431194	0.3431194	57.667	0.000	0.000	5.667	0.333	3	19.54720	0.13179
402	DVLA	2017	0.0893206	0.0893206	65.000	0.143	0.571	11.857	0.000	7	21.21850	0.31970
403	ERTX	2017	0.0968916	0.0968916	47.000	0.333	0.333	4.000	0.333	3	13.59589	0.69832
404	ESTI	2017	-0.0957923	0.0957923	61.000	0.500	0.000	33.500	0.500	2	20.54175	0.76100

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405	GDST	2017	-0.2392940	0.2392940	54.000	0.000	0.500	5.500	0.500	2	20.97554	0.34319
406	GDYR	2017	-0.1758580	0.1758580	63.000	0.000	0.333	3.333	0.333	3	21.24014	0.56710
407	HMSP	2017	-0.3258244	0.3258244	64.200	0.200	0.400	5.200	0.000	5	24.48774	0.20927
408	ICBP	2017	0.0841189	0.0841189	66.000	0.000	0.000	8.000	0.500	6	24.17704	0.35722
409	IGAR	2017	0.2003040	0.2003040	62.333	0.000	0.333	4.333	0.000	3	20.05583	0.13854
410	IMAS	2017	0.2372660	0.2372660	66.714	0.000	0.143	14.857	0.571	7	24.16929	0.70419
411	INAF	2017	-0.0269139	0.0269139	55.667	0.333	0.000	3.333	0.333	3	21.14845	0.65461
412	INCI	2017	-0.0800269	0.0800269	60.667	0.000	0.000	15.000	0.333	3	19.53184	0.11656
413	INDF	2017	0.0926929	0.0926929	67.125	0.000	0.500	9.750	0.500	8	25.19991	0.46831
414	INDR	2017	-0.1339548	0.1339548	62.000	0.200	0.400	22.000	0.000	5	23.10650	0.64467
415	INDS	2017	-0.1049576	0.1049576	64.667	0.000	0.000	20.000	0.000	3	21.61306	0.11903
416	INTP	2017	0.0096198	0.0096198	58.857	0.000	0.714	8.000	0.286	7	24.08585	0.14922
417	IPOL	2017	-0.0904072	0.0904072	63.000	0.333	0.000	10.333	0.333	3	22.08399	0.44598
418	JECC	2017	0.0570108	0.0570108	60.333	0.333	0.000	13.000	0.667	3	21.37974	0.71610
419	JPFA	2017	0.0357048	0.0357048	65.667	0.167	0.000	6.000	0.333	6	23.77201	0.53551
420	JPRS	2017	-0.0901391	0.0901391	53.500	0.000	0.000	0.000	1.000	2	19.69438	0.18528
421	KAEF	2017	0.1675598	0.1675598	59.200	0.200	0.000	3.400	0.000	5	22.53092	0.57801
422	KBLI	2017	0.1768979	0.1768979	70.000	0.000	0.200	13.600	0.200	5	21.82645	0.40714
423	KBRI	2017	-0.2842065	0.2842065	52.000	0.500	0.000	2.500	1.000	2	20.88132	0.74978
424	KDSI	2017	0.1281881	0.1281881	66.000	0.000	0.000	24.500	0.000	4	21.00716	0.63446
425	KIAS	2017	-0.0821790	0.0821790	58.167	0.000	1.000	4.333	0.000	6	21.29289	0.19284
426	KLBF	2017	0.1247421	0.1247421	56.571	0.286	0.000	7.286	0.143	7	23.53365	0.16383
427	KRAS	2017	-0.1553791	0.1553791	56.143	0.000	0.000	1.286	0.429	7	24.74399	0.54968
428	LION	2017	0.2815215	0.2815215	63.000	0.000	0.667	19.333	0.333	3	20.34045	0.33673

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429	LMPI	2017	0.1023306	0.1023306	56.500	0.000	0.000	8.000	0.500	2	20.54240	0.54915
430	LMSH	2017	-0.0803792	0.0803792	68.000	0.000	0.000	6.000	0.000	3	18.89793	0.19571
431	LPIN	2017	0.7574464	0.7574464	56.000	0.000	0.000	3.000	0.000	2	19.40693	0.13671
432	LTLS	2017	0.1099077	0.1099077	70.167	0.500	0.167	13.333	0.167	6	22.47582	0.67568
433	MASA	2017	-0.1896361	0.1896361	53.400	0.000	0.200	6.400	0.200	5	22.91036	0.48755
434	MERK	2017	0.1592809	0.1592809	61.000	0.333	0.667	3.000	0.667	3	20.55722	0.27340
435	MLBI	2017	-0.0048589	0.0048589	61.667	0.000	0.500	4.500	0.500	6	21.64358	0.57575
436	MLIA	2017	-0.0130797	0.0130797	61.800	0.200	0.200	3.400	0.200	5	22.36936	0.66177
437	MRAT	2017	0.2517906	0.2517906	66.000	0.000	0.000	12.333	0.000	3	20.02481	0.26264
438	MYOR	2017	0.1248662	0.1248662	69.000	0.000	0.000	11.800	0.400	5	23.42569	0.50694
439	NIKL	2017	0.2642237	0.2642237	54.000	0.000	0.667	0.667	0.000	3	21.25901	0.66979
440	NIPS	2017	0.1739964	0.1739964	61.333	0.333	0.000	14.000	0.667	3	21.36405	0.53660
441	PBRX	2017	0.1906415	0.1906415	53.000	0.000	0.000	4.667	1.000	3	22.77325	0.59049
442	PLAS	2017	0.1957672	0.1957672	56.500	0.000	0.000	9.000	0.000	2	19.70123	0.46435
443	PTSN	2017	0.2208728	0.2208728	47.250	0.250	0.000	7.500	0.250	4	20.62948	0.24810
444	RICY	2017	-0.1090370	0.1090370	53.333	0.000	0.000	8.667	0.333	3	21.04132	0.68695
445	RMBA	2017	0.0390918	0.0390918	57.667	0.000	0.000	3.667	0.333	3	23.36828	0.36638
446	SDPC	2017	0.2871852	0.2871852	59.500	0.250	0.750	5.333	0.250	4	20.65927	0.77333
447	SIPD	2017	-0.0097218	0.0097218	71.000	0.333	0.000	10.667	0.000	3	21.52961	0.64669
448	SKBM	2017	0.0253394	0.0253394	50.333	0.667	0.333	6.667	0.000	3	21.20756	0.36955
449	SKLT	2017	-0.0182106	0.0182106	53.750	0.250	0.000	11.250	0.500	4	20.27116	0.51662
450	SMBR	2017	-0.1835691	0.1835691	54.000	0.000	0.000	2.000	0.000	5	22.34470	0.32557
451	SMGR	2017	-0.1295999	0.1295999	59.143	0.000	0.000	1.000	0.143	7	24.61434	0.37833
452	SMSM	2017	0.1037272	0.1037272	58.500	0.000	0.000	14.500	0.000	2	21.61663	0.25177

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453	SPMA	2017	-0.1078262	0.1078262	59.600	0.000	0.000	10.600	0.000	5	21.50060	0.45049
454	SRSN	2017	0.0218108	0.0218108	66.000	0.000	0.125	9.875	0.250	8	20.29667	0.36343
455	SULI	2017	0.6271319	0.6271319	64.000	0.250	0.000	3.750	0.250	4	20.83488	0.98948
456	TCID	2017	-0.0415088	0.0415088	59.600	0.000	0.400	7.800	0.000	5	21.58269	0.21318
457	TFCO	2017	-0.1766736	0.1766736	70.000	0.000	0.000	7.000	0.000	3	22.22438	0.11010
458	TPIA	2017	-0.2050694	0.2050694	60.571	0.143	0.571	4.571	0.571	7	24.42388	0.44136
459	TSPC	2017	0.1266465	0.1266465	63.200	0.600	0.000	9.600	0.000	5	22.72945	0.31647
460	UNIT	2017	-0.0722044	0.0722044	48.667	0.000	0.000	2.000	0.000	3	19.87085	0.42480
461	UNVR	2017	-0.0521769	0.0521769	59.600	0.000	0.000	8.400	0.600	5	23.66277	0.72637
462	VOKS	2017	0.2196843	0.2196843	56.333	0.333	0.167	6.833	0.167	6	21.47003	0.61419
463	WAPO	2017	-0.4132644	0.4132644	45.000	0.500	0.000	4.500	0.500	2	18.63435	0.38843
464	YPAS	2017	0.0729683	0.0729683	52.333	0.333	0.000	12.333	0.333	3	19.53103	0.58130

Attachment D : Data Processing use STATA version 14.0

1. Descriptive Statistics

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estpost summarize Abs_Dat BAGE BGEN BNAT BTEN BEXP BSIZE FSIZE LEV, detail
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	e(count)	e(sum_w)	e(mean)	e(Var)	e(sd)	e(skewn~)	e(kurto~)	e(sum)	e(min)	e(max)	e(p1)
Abs_Dat	464	464	.1707028	.0221375	.1487866	2.35013	12.41483	79.20609	.0002148	1.137866	.0044188
BAGE	464	464	58.56013	38.82554	6.231014	-.5715007	3.88812	27171.9	33	74.5	41.5
BGEN	464	464	.1080408	.0286617	.1692976	1.378658	3.968547	50.13095	0	.75	0
BNAT	464	464	.1492873	.0633333	.2516611	1.496548	3.965512	69.26929	0	1	0
BTEN	464	464	7.662457	34.3353	5.859633	1.219624	4.608085	3555.38	0	33.5	0
BEXP	464	464	.2539056	.0591862	.2432821	.6980003	2.974887	117.8122	0	1	0
BSIZE	463	463	4.045356	2.865904	1.692898	1.078488	4.391127	1873	2	13	2
FSIZE	464	464	21.04428	3.540806	1.881703	-1.078822	6.305945	9764.544	13.22732	25.19991	13.59589
LEV	464	464	.4817409	.0859047	.293095	2.469011	16.32227	223.5278	.0372316	2.71104	.0837938
	e(p5)	e(p10)	e(p25)	e(p50)	e(p75)	e(p90)	e(p95)	e(p99)			
Abs_Dat	.0138209	.0258482	.065539	.1432754	.2327564	.3359852	.4073943	.8267564			
BAGE	46.66667	50.75	55	58.84524	63	66	67.66666	72			
BGEN	0	0	0	0	.2	.3333333	.5	.6666667			
BNAT	0	0	0	0	.2	.6666667	.6666667	1			
BTEN	1	1.5	3	6.366667	10.66667	16	19	26.66667			
BEXP	0	0	0	.25	.4	.6	.6666667	1			
BSIZE	2	2	3	3	5	6	7	8			
FSIZE	18.50725	19.31798	20.13554	21.02764	22.19246	23.36828	24.03398	24.65648			
LEV	.1317891	.1689407	.2792158	.4561998	.6399033	.7473239	.8436339	1.423656			

2. Pearson Correlation Test

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. estpost corr Abs_Dat BAGE BGEN BNAT BTEN BEXP BSIZE FSIZE LEV, matrix
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	e(b)	e(rho)	e(p)	e(count)
Abs_Dat				
Abs_Dat	1	1		464
BAGE	-.0779173	-.0779173	.0936574	464
BGEN	-.049294	-.049294	.2893238	464
BNAT	-.0560659	-.0560659	.2280537	464
BTEN	-.1205745	-.1205745	.0093295	464
BEXP	.0795	.0795	.0871603	464
BSIZE	-.1414511	-.1414511	.0022824	463
FSIZE	-.163304	-.163304	.0004125	464
LEV	.0620189	.0620189	.1823322	464
BAGE				
BAGE	1	1		464
BGEN	-.2053118	-.2053118	8.26e-06	464
BNAT	-.0014352	-.0014352	.9754044	464
BTEN	.4129462	.4129462	1.56e-20	464
BEXP	-.2478379	-.2478379	6.34e-08	464
BSIZE	.2276298	.2276298	7.43e-07	463
FSIZE	.286088	.286088	3.44e-10	464
LEV	.0514621	.0514621	.2686096	464
BGEN				
BGEN	1	1		464
BNAT	-.1638958	-.1638958	.0003928	464
BTEN	.0603139	.0603139	.1946732	464
BEXP	.198812	.198812	.000016	464
BSIZE	-.1645154	-.1645154	.0003785	463
FSIZE	-.0279691	-.0279691	.5478636	464

—more—

	FSIZE	-.0279691	-.0279691	.5478636	464
	LEV	.1431254	.1431254	.0019973	464
BNAT					
	BNAT	1	1		464
	BTEN	-.1846985	-.1846985	.0000627	464
	BEXP	-.0363377	-.0363377	.4348705	464
	BSIZE	.3024447	.3024447	3.00e-11	463
	FSIZE	-.0129676	-.0129676	.7805607	464
	LEV	-.0808196	-.0808196	.0820245	464
BTEN					
	BTEN	1	1		464
	BEXP	-.0614828	-.0614828	.1861489	464
	BSIZE	-.0587407	-.0587407	.207085	463
	FSIZE	.0546024	.0546024	.2404447	464
	LEV	.0875431	.0875431	.0595288	464
BEXP					
	BEXP	1	1		464
	BSIZE	-.0961481	-.0961481	.0386343	463
	FSIZE	.0287096	.0287096	.5373125	464
	LEV	.0501121	.0501121	.2813847	464
BSIZE					
	BSIZE	1	1		463
	FSIZE	.4481683	.4481683	2.95e-24	463
	LEV	-.1105775	-.1105775	.0173025	463
FSIZE					
	FSIZE	1	1		464
	LEV	-.0025215	-.0025215	.9568011	464
LEV					
	LEV	1	1		464
.					
	end of do-file				

3. Multicollinearity Test

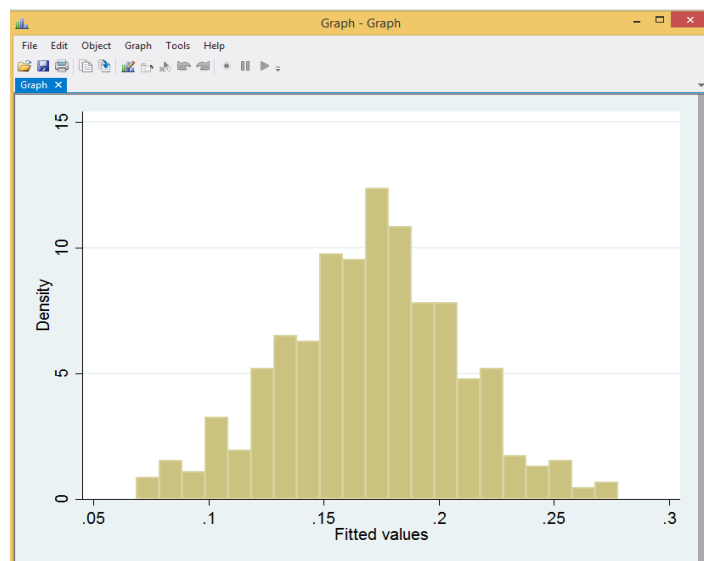
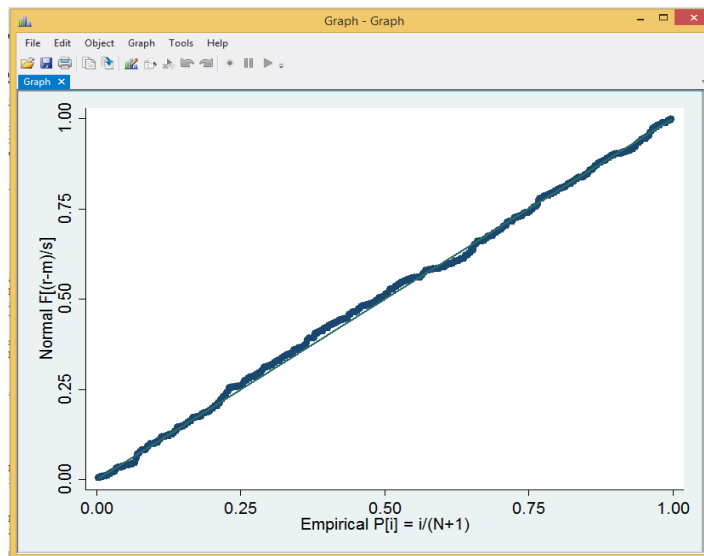
vif		
Variable	VIF	1/VIF
BAGE	1.51	0.660542
BSIZE	1.49	0.672942
FSIZE	1.38	0.726543
BTEN	1.30	0.769964
BNAT	1.18	0.847232
BGEN	1.14	0.873922
BEXP	1.11	0.898106
LEV	1.04	0.958039
Mean VIF	1.27	
.		
end of do-file		

4. Normality Test

```
. predict r
(option xb assumed; fitted values)

. sktest r
```

Skewness/Kurtosis tests for Normality					
Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	joint Prob>chi2
r	464	0.6360	0.8586	0.26	0.8799



5. Heteroscedasticity Test

```
. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of Abs_DAt

      chi2(1)      =    56.70
      Prob > chi2  =    0.0000

.
end of do-file
```

6. Autocorrelation Test

```
. dwstat

Durbin-Watson d-statistic( 9, 464) = 2.055236

.
end of do-file
```

7. OLS Regression

```
. reg Abs_DAt BAGE BGEN BNAT BTEN BEXP BSIZE FSIZE LEV
```

Source	SS	df	MS	Number of obs	=	464
Model	.678291756	8	.08478647	F(8, 455)	=	4.03
Residual	9.57135245	455	.021035939	Prob > F	=	0.0001
				R-squared	=	0.0662
				Adj R-squared	=	0.0498
Total	10.2496442	463	.02213746	Root MSE	=	.14504

Abs_DAt	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
BAGE	.0008804	.0013308	0.66	0.509	-.0017349 .0034958
BGEN	-.076846	.042592	-1.80	0.072	-.1605475 .0068554
BNAT	-.0398538	.0291229	-1.37	0.172	-.0970859 .0173783
BTEN	-.0035555	.001311	-2.71	0.007	-.0061318 -.0009791
BEXP	.0543936	.0292086	1.86	0.063	-.0030069 .111794
BSIZE	-.0063441	.0048547	-1.31	0.192	-.0158845 .0031962
FSIZE	-.0110343	.0042022	-2.63	0.009	-.0192923 -.0027763
LEV	.0338918	.0234907	1.44	0.150	-.0122719 .0800555
_cons	.3884023	.0960139	4.05	0.000	.1997167 .5770879

8. Robust Regression

```
. reg Abs_Dat BAGE BGEN BNAT BTEN BEXP BSIZE FSIZE LEV, robust
```

```
Linear regression                Number of obs   =       464
                                F(8, 455)       =       3.68
                                Prob > F           =       0.0004
                                R-squared          =       0.0662
                                Root MSE       =       .14504
```

Abs_Dat	Robust		t	P> t	[95% Conf. Interval]	
	Coef.	Std. Err.				
BAGE	.0008804	.0011885	0.74	0.459	-.0014552	.0032161
BGEN	-.076846	.0371234	-2.07	0.039	-.1498007	-.0038914
BNAT	-.0398538	.0258152	-1.54	0.123	-.0905857	.0108781
BTEN	-.0035555	.0012533	-2.84	0.005	-.0060185	-.0010924
BEXP	.0543936	.031491	1.73	0.085	-.0074922	.1162794
BSIZE	-.0063441	.0042549	-1.49	0.137	-.0147058	.0020175
FSIZE	-.0110343	.005287	-2.09	0.037	-.0214243	-.0006443
LEV	.0338918	.0245251	1.38	0.168	-.0143047	.0820884
_cons	.3884023	.0979395	3.97	0.000	.1959325	.5808721



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DIVERSITY ON EARNING MANAGEMENT**

Paper ID : 1175712858
Class ID : 19741841
Date : 19-Sep-2019

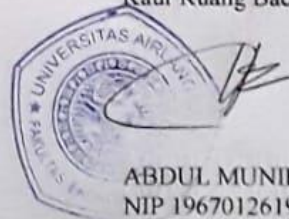
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Surabaya, 19 September 2019

Kaur Ruang Baca,



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THE EFFECT OF BOARD RELATION ORIENTED DIVERSITY AND TASK ORIENTED DIVERSITY ON EARNING MANAGEMENT

UNDERGRADUATE THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE BACHELOR DEGREE OF ACCOUNTING

ACCOUNTING DEPARTMENT

STUDY PROGRAM OF ACCOUNTING

SUBMITTED BY:
ARINTIS WAHYU SCSANTI
STUDENT ID: 04151133124

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